REPORT
OF
METROPOLITAN PARK COMMISSION

1898

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REPORT

OF THE

Board of Metropolitan Park Commissioners.

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Commonwealth of Massachusetts.

REPORT.

The Metropolitan Park Commission presents herewith its fifth annual report.

The principal new work of the past year has been the development of Revere Beach, the preparation of plans for the acquirement of the shores of Charles River from Watertown to Newton Upper Falls and the completion of Mystic Valley Parkway. Construction of the Blue Hills and Middlesex Fells Parkways has been continued, and much study and investigation has been made preliminary to the expenditure of the appropriations for parkways made by the Legislature of 1897. This work divides itself naturally, and will be considered as usual, according as it has been done under the Park Acts or under the Boulevard Acts.

A preliminary commission reported to the Legislature of 1893 a scheme for park and parkway or boulevard work, based chiefly on the accompanying report of its landscape architect, Mr. Charles Eliot. In this report Mr. Eliot described the country about Boston as possessed of unusual wealth of scenery, but ill adapted for indiscriminate crowding by large population, and argued that there was a special necessity for regulating its settlement by excluding population from certain portions and by reserving other portions for the sake of the scenery or as recreation grounds. That report of Mr. Eliot is this year reprinted as an Appendix to this report.

The immediate result of these preliminary reports was the enactment of the Park Act, chapter 407 of the Acts of 1893, which created a Metropolitan Parks District of Boston and

thirty-six other neighboring cities and towns, and authorized the appointment by the governor of a permanent commission of five, to serve without salary, empowered to acquire in the name and for the benefit of the Commonwealth lands and rights in land to the extent of appropriations, and to receive gifts on behalf of the Commonwealth. The same act appropriated $1,000,000, to be provided in the first instance by the issue of forty-year State bonds, but to be repaid through a sinking fund by yearly assessments upon the cities and towns of the district according to a table of apportionment made each five years by a special commission to be appointed by the Supreme Court. The yearly expense and cost of care and maintenance of the reservations were by the same act also to be included in the State tax upon the same cities and towns according to the same tables of apportionment.

Under this act and its amendments appropriations aggregating $3,300,000 were placed at the disposal of the Commission prior to May, 1896. None of these appropriations were limited to the acquirement of specific lands except in the case of $300,000, which by the peculiar phraseology of the act limited this sum to the acquirement of lands along Charles River. Nevertheless, the reports of the Commission and the hearings before legislative bodies so distinctly pointed out the purposes for which these funds were expected to be used that they have in effect been held and used as if in trust to acquire specific lands.

In spite of the unstinted efforts of the Commission in response to the generous confidence thus manifested, it was not possible to acquire all the lands recommended to the Legislature before the first apportionment was made and published by the special commission appointed for that purpose; and in response to a vigorous demand from several portions of the Metropolitan Parks District the Legislature of 1896 in its closing hours by special act set aside the apportionment already made before any part of it had been collected from the district, and directed that all expenses of the Commission and the cost of acquirement and of care and maintenance of all the reservations and parkways until 1900 should be paid out of the appropriations already made by the Commonwealth. Under a ruling of the Attorney-Gen-

eral the immediate effect of this legislation was to require the Treasurer and Receiver-General to at once withhold from the available funds of the Commission about $1,000,000, and in consequence to preclude new work, and for the time being render the Board practically bankrupt. The report of last year therefore asked for a reconsideration of this legislation of 1896, and either its repeal or necessary new appropriations to replace the amount withdrawn. After special hearings and a consideration of the matter the Legislature of 1897 decided not to repeal the legislation of the preceding year, but to make new appropriations to replace those withdrawn to provide for interest and expenses until 1900. A further appropriation of $500,000 was also made under the Park Act, upon the understanding that it was to be used for acquiring additional lands along Charles River beyond those already acquired. The details of all of these appropriations are given in the Secretary's report, but may be briefly summarized as follows: —

Under Park Acts, ...	$3,500,000 00	
Under Charles River Act, ...	300,000 00	
Under Boulevard Acts, ...	2,000,000 00	
		$5,800,000 00
Add receipts from sales, bath-house, etc.: —		
Park Acts, ...	$12,987 08	
Boulevard Acts, ...	3,947 00	
Charles River Act, ...	2,906 61	
		19,840 69
Add appropriations under chapter 311 of 1897 for interest and sinking fund until 1900: —		
For Park Acts, ...	$900,000 00	
For Boulevard Acts, ...	100,000 00	
		1,000,000 00
		$6,819,840 69

Acquirements during the past year under the Park Acts have therefore been confined to lands along Charles River and to a few small pieces of land in amendment of the reservations already acquired, all of which are described in detail in the Secretary's report. In preparing for the takings along Charles River the entire Board, and especially its sub-committee, has carefully and repeatedly examined the shores from

the river and from the land side, and has conferred with many of the owners and with its landscape advisers and engineer and other experts. As a result the decision was reached that except where the shores were held by great manufacturing plants in active operation or were already devoted to public or quasi-public uses, the entire shore must be taken under control of the State to a point as far up the stream as available funds would permit. In the case of large private estates it seems wise and economical to take merely an easement which will prevent the erection of buildings and destruction of trees and other elements of scenery, while leaving to the owner privacy in all other respects. Elsewhere it seems necessary to acquire the fee and public ownership back to a line along which in the future a road may be built. A careful estimate of values has also been made by competent experts and the takings limited to the available appropriations. The result has been the preparation of plans for acquirement which when made will give public control in this and other boards of substantially all the banks of this river and its scenery from Craigie Bridge to Hemlock Gorge at Newton Upper Falls, a distance of 19 miles.

The present holdings under the Park Acts are as follows: —

	1897. Area in Acres.
Blue Hills,	4,232.09
Middlesex Fells,	1,802.37
Stony Brook,	460.64
Charles River,	245.69
Beaver Brook,	58.08
Hemlock Gorge,	24.46
Revere Beach,	66.19
Total,	6,889.52

To these must be added the land for West Roxbury Parkway, 156 acres, transferred to the care of Boston Park Commission, and 1,200 acres in the Middlesex Fells at present under the care of this Board, although controlled by local water boards and soon to be in part by the Metropolitan Water Board. The lands to be taken on Charles River above Watertown are not included in this table.

The great work of development during the past year has been upon Revere Beach. All buildings have been removed from the water side except those used for headquarters, and these will probably be removed next year. The railroad has been removed to its new location about 600 feet back from the beach; all grade crossings have been abolished; the streets approaching the beach have been regraded, and a permanent driveway, sidewalk and promenade constructed in place of the railroad for about one-half the length; permanent shelters or outlooks have been constructed; a number of simple canvas-covered shelters have been placed on the beach; and a great bath-house of 1,000 rooms with additional accommodations for an equal number of bicycles has been built back of the driveway, with subways under the road to the beach. The railroad surrendered its location on the crest of the beach on May 1. The bath-house was built in 122 days, and in use from August 1. The driveway from Revere Street to Crescent Beach was finished at the close of the season, and the rest will be completed to its southern point early next year. While this work was being carried on the beach was used by crowds estimated to have reached on one of the hottest days 75,000 to 100,000 people, and it is a matter of congratulation that no serious accident or breach of the peace occurred.

What was by many believed impossible has been accomplished, and this reservation is now attractive and of the highest safety and usefulness to all classes of people. The planning and building of the bath-house, shelters and driveways have occupied the constant interest and attention not only of professional advisers and employees but of every member of the Board. Careful study and inspection of the facilities for bathing at Atlantic City, Coney Island, Narragansett Pier, Newport and City Point were made preliminary to this work, and it is believed that as a result the Metropolitan Parks District now has the most convenient and practical seashore bath-house in this country. Between August 1 and September 19 it was used by 62,135 people.

Authorities in this country and abroad who have given study to the matter of providing public resorts by State and municipality are agreed that efficient management and main-

tenance require that a moderate charge be made for individual use of extraordinary conveniences, such as restaurants, seashore bath-houses, boats and the like. Such individual use is a special privilege which for the time excludes the rest of those who pay the taxes, and should be paid for as such. This principle and the scale of prices to be charged at first was stated to the Legislature before the bath-house was begun, and the statement was also made that if these prices should more than provide for necessary expenses they would be reduced. In pursuance of this plan the prices charged at first were reduced before the close of the season; but, although these reduced prices showed a small balance above operating expenses, it is impossible to regard the experiment as conclusive until the experience of an entire season has confirmed this result.

Just as the plans for the development of Revere Beach were completed, and before construction had begun, Charles Eliot, the landscape adviser of this Board, died. To him more than to any other one person the Commonwealth is indebted for the Metropolitan Park System, and in his death this Board lost both friend and counsellor.

In the other reservations the work of development has been carried on by the permanent forces of each reservation along the simple lines indicated in previous reports. In brief, those lines are the protection of the reservations from fire, and such slight improvements as will serve that purpose and at the same time make them useful to the public without elaborate development.

Superintendence and organization necessary to care for the reservations remain practically unchanged from that of last year except at Revere Beach, where the building of the bath-house has required the employment of a force of 63 on week-days and of 83 on Sundays and holidays. The details of all branches of organization and its work is described in the accompanying department reports.

In view of the legislation of 1896, confirmed by that of 1897, to which reference at some length has already been made, it must be assumed that substantially all other acquirements of land deemed advisable under the Park Acts must be

made before 1900, in order that their cost may then be apportioned with a full knowledge. It is therefore at this time most important that a careful review be made of the scheme of acquirement recommended by the preliminary commission, upon whose report this work was begun, in order that it may be clearly understood how much has been accomplished and what remains to be accomplished. The original scheme is described in detail in the report of Mr. Eliot, reprinted in the Appendix to this report. Briefly restated, that report recommended the acquirement of the Blue Hills, Middlesex Fells, Beaver Brook, Hemlock Gorge and certain minor hills and ponds, the islands of the harbor not in public control, Revere Beach and whatever else of seashore might be unsuitable for commerce and business, the lower portion at least of Charles River, and portions at least of the Neponset and Mystic rivers. Reference to the target maps accompanying the Landscape Architects' report of this year will show how equitably these areas, with that of the Lynn Woods of 2,000 acres, held by the city of Lynn, are distributed over the Metropolitan Parks District. The list of reservations already acquired clearly indicates that substantially all of the acquirements originally recommended have now been made or soon will be made. All the woods reservations which were then recommended have been acquired. Additional areas may prove advisable as time goes on, and it can be already foreseen that if Lynn Woods should be transferred to the care of this Board some additions to that superb reservation would probably be a necessity. In the Middlesex Fells an element of uncertainty has been introduced by the legislation creating and empowering the Metropolitan Water Board. The ponds and hills throughout the district should generally be acquired by the local park boards, as some of them already have been, rather than by this Board. A careful examination made some time since showed that, while something might be done to encourage tree planting on the islands of the harbor, no acquirements could probably be made there which as recreation grounds would be worth their cost. Revere Beach has been acquired, and other appropriations under the Boulevard Act, discussed further on in this

report, make it possible and perhaps probable that Winthrop Shore in extension of Revere Beach, and Quincy and Squantum Shore, may be acquired without further appropriations. If these shores are acquired, the Commonwealth will then own six miles of seashore on the north and an equal extent on the south of Boston. The shores of Charles River, as stated above, will soon be acquired to Hemlock Gorge under appropriations already made, although unexpected items of cost in the lands acquired under the specific appropriation of 1893 for that purpose may render that appropriation insufficient. This cannot be determined accurately, however, until suits now pending shall be decided.

It may then be fairly said that, of the scheme of park acquirements recommended by the preliminary commission, there remains to be acquired only the upper reaches of Charles River within the district, and the shores of the Neponset and Mystic rivers. Of these the shores of the Neponset and Mystic rivers are of first importance. On both rivers substantial acquirements have been made or are contemplated by the cities and towns bordering them. Both lie within regions already settled by a rapidly increasing population. Reference to the accompanying picture of a scene on the Neponset River, and reference to the special report of the State Board of Health on the Neponset Meadows, made to the last Legislature, show that the necessity for immediate ownership and control of these shores is no æsthetic dream, but a practical question of health and of dollars and cents to those who live near these streams. Upon the Neponset River at least large gifts of land are now offered the Commonwealth, on the condition of acquiring other cheap lands near by. If these river banks are acquired they will always keep open possible pleasant lines of communication through the crowded cities from the western portions of the district to the east.

The Boulevard Act of 1894, chapter 288, provided an appropriation of $500,000 and power to acquire lands and existing roads for the purpose of connecting the reservations with each other and with the cities and towns of the district.

The opportunity for securing such connections at low cost

VIEW ON THE NEPONSET RIVER

In Hyde Park.

in advance of indiscriminate settlement by the rapidly increasing population of the district had been pointed out by Mr. Eliot in his first report, but the preliminary commission was unwilling to encumber its recommendations with such suggestions. The passage of this act came, therefore, as a surprise and almost an embarrassment, because of the fear that interest in this new work might distract attention and appropriations from the more important work of securing the reservations themselves. Fortunately the already well-settled policy that the Commission should proceed on Metropolitan lines, without regard to merely local interests, as well as the definiteness of the scheme for acquirement of reservations and the well-marked topography and trend of population, served to plainly point the direction which this new work should take. A simple but comprehensive plan for the entire district, based on that of the reservations acquired or contemplated, was first mapped out, and acquirement was limited to such portions as seemed absolutely necessary, or likely to bring the largest return for the expense involved.

In the reports to the Legislature of 1895 and 1896 the Board made a statement of the work contemplated under this act, but avoided any suggestion of a general plan, and expressed its doubt of the advisability of too soon entering upon this class of work. In spite of their conservative reports, however, so many petitions were presented by citizens of the district to the Legislature of 1896 that at the closing hearing upon these petitions the Commission deemed it wise to indicate the lines which in its judgment this work should follow, and to state its belief that if further appropriations for this class of work were to be made they should be sufficient to provide for the acquirement of substantially all the necessary lands for the entire system. It seemed best, however, to the Legislature to make another appropriation of $500,000, and the Board was obliged to apply this appropriation in the same way as that previously made to portions of the general plan. In this the Commission proceeded very carefully, with a determination to first know the cost of each undertaking. This course was all the more necessary because of the further legislation, above alluded to, which postponed

the apportionment of assessments upon the district, and directed the completion of all work before 1900.

The Legislature of 1897, however, reaffirmed that of 1896, and increased the appropriation under this act by a further appropriation of $1,000,000, after hearing petitions for the construction of a speedway as part of the proposed work along Charles River, for the acquirement of Quincy Shore and Winthrop Shore and for a connection between Revere Beach and the crowded centres of the district and for various other parkways.

The appropriations thus made, with $100,000 appropriated for expense and sinking fund requirements until 1900, and minor receipts from sale of old buildings, etc., aggregate $2,103,947.

The work undertaken under the first two appropriations of $500,000 has been referred to in previous reports, and is again described in some detail in the department reports accompanying this report. In brief, land has been acquired for the Blue Hills Parkway from the Blue Hills to Blue Hill Avenue at Mattapan, for Middlesex Fells Parkway from Broadway Park, Somerville, to the Middlesex Fells, for the Mystic Valley Driveway and for a connection from Revere Beach to the principal road through Chelsea to Boston. Construction of a portion of the Middlesex Fells Parkway has been completed and is open to travel, and the remaining portion will be completed next summer. The Mystic Valley Driveway is practically completed and is open to public use. Construction of a short piece of Revere Beach Parkway is under way, and also of so much of the Blue Hills Parkway as seems necessary for the present. Construction of several short pieces of boundary and entrance roads, about 20 feet wide, with no sidewalks, have been completed in the Blue Hills and Middlesex Fells. Through the Stony Brook Woods a similar road is being built from the Boston side, where West Roxbury Parkway will end, to the southerly side, from which a parkway to the Blue Hills may be provided along Mother Brook and the Upper Neponset, by one of the various routes suggested by the Landscape Architects.

The acquirements under the Boulevard Act may be summarized as follows: —

	1897. Length in Miles.
Blue Hills Parkway,	2.25
Middlesex Fells Parkway,	4.32
Mystic Valley Parkway,	2.40
Revere Beach Parkway,	.62
Neponset River Parkway,	.40
	9.99

Careful consideration has been given to the suggestions for other parkways above alluded to, but priority of other work and the necessary delay attendant upon complete investigation of details of engineering and cost have made it impossible to make further acquirements for parkways during the present year. The report of the Landscape Architects, with the accompanying target maps, indicates their views of a complete system of connecting parkways, but until the commission can make thorough investigations it will not be prepared to make definite recommendations. In the mean time, it cannot see its way to consider plans for new work, nor can it see that further appropriations under this act are advisable this year.

In brief, then, the Legislature has directed that the work of acquirement shall cease before 1900, and it therefore seems wise that if additional appropriations are to be made they should first be made under the park acts for acquirement of lands along the shores of the rivers. With the acquirement and construction already provided for under these acts, the remaining necessary acquirements need not be very great or expensive if made at once. The population of the cities and towns now composing the Metropolitan Parks District increased from 524,742 in 1870 to 1,018,515 in 1895, and at the same rate of increase will be over 2,000,000 before another twenty-five years have passed. In spite of the withdrawal from taxation of these reservations and parkways, the assessed valuation of each city and town of the district has steadily increased, so that the valuation of the entire district is now $176,000.000 more than in 1893. It is clear that the value of the lands already

acquired by the Commonwealth has materially increased, and that the cost of the lands yet to be acquired must increase with each year of delay.

The usual reports of the Secretary and of the Landscape Architects and the Engineer are submitted herewith.

Respectfully submitted,

WILLIAM B. DE LAS CASAS.
ABRAHAM L. RICHARDS.
AUGUSTUS HEMENWAY.
EDWIN B. HASKELL.
THOMAS L. LIVERMORE.

Dec. 8, 1897.

REPORT OF THE SECRETARY.

Mr. William B. de las Casas,
Chairman Metropolitan Park Commission.

Sir: — I herewith present my report for the year ending Dec. 1, 1897. For convenience I have made the following sub-divisions: 1. Acquirement of lands. 2. Revere Beach Bath-house. 3. Administration. 4. Finances.

1. Acquirement of Lands.

Charles River.

Under the Park Act (chapter 407 of the Acts of 1893) no new reservations have been created. The takings, however, already made and those in preparation, extending the Charles River Reservation from Watertown to Newton Upper Falls, equal in importance those already made on the lower reaches of the river. At the close of last year the available banks of Charles River not in public or quasi-public holdings had been acquired as far up the river on the northerly side as the public landing in Watertown, and on the southerly side to the easterly end of Charlesbank Road in Newton. Early in the year a taking was made in Newton of a strip of the river bank about 100 feet in width, extending the reservation to the northerly end of Maple Street. In Watertown the reservation was first extended to the line of the Walker Pratt Manufacturing Company by a taking including the old town landing and several small estates on which the buildings were of small value. Later, upon the completion of the new buildings of the Walker Pratt Company and the abandonment of their old works, the land of this corporation between the land already acquired and the Watertown Bridge at Galen Street was taken. From this point to the Hemlock Gorge

Reservation at Newton Upper Falls takings on both banks of the river have been in course of preparation ever since the action of the Legislature of last winter assured the necessary appropriations for carrying out the recommendations contained in the report of the Commission. This has necessitated a topographical survey of the banks of the river, of varying width, by the Engineering Department; the study of these surveys by the Landscape Architects and the plotting thereon of their suggestions as to the line of taking to be followed; an estimate by experts of the probable cost of the taking, on the lines suggested; a careful consideration of both the artistic and financial aspects of the scheme presented, followed necessarily by some modifications of the plans; the preparation of taking plans, based on careful surveys, of each property to be included; and, lastly, the preparation by the Law Department of the necessary papers to accompany the plan. The distance along the river from the former takings to the Hemlock Gorge Reservation which has been covered by the surveys and examinations above described is 11 miles. At the date of this report several taking plans are already in the hands of the Law Department, and the remaining taking plans are in course of preparation by the Engineering Department. Early in the year it may be expected that all formalities will have been complied with, and the greater portion of the banks of the Charles River from Craigie's Bridge to Newton Upper Falls, a distance of 19 miles, will be public holdings of the Commonwealth, cities, towns or semi-public corporations.

Two takings have been made which amend the lines of the earlier takings on the river. Longfellow Meadows in Brighton, the property of Harvard College, were omitted from the first takings, on the supposition that when the banks of the river were required for development satisfactory arrangements could be made with the authorities of the University. This supposition has proved to be correct. A taking of the banks of the river and a portion of the meadows, containing about 50 acres, has been made on lines approved by the Corporation of Harvard College. No money consideration is to pass, the consideration being the agreement of the Commonwealth to properly fence the remaining land, to do certain

filling, and to allow a limited use of a portion of the river bank for purposes connected with the University. The proposed development at this point and the development along the opposite shore by the Cambridge Park Commission called the attention of the Commission to the inadequacy of the approach to the reservation at Gerry's Landing in Cambridge, opposite Elmwood Avenue, especially should a connection hereafter be established at this point with roads leading to Fresh Pond. The Commission, therefore, deemed it wise to take two lots of land lying at the easterly side of Willis Court, on which the buildings were of slight value. The land acquired is sufficient to allow of adjustment of lines of construction to whatever plan of development may be hereafter adopted. About an acre and a quarter of land was also taken on the Newton bank of the river between Upper and Lower Falls, where complication of ownership threatened the destruction of trees upon the banks within the limits of the general taking now in preparation. Two small abandonments have been made, both in the section between Market and North Harvard streets, in Brighton, on lines which conform to the proposed development of this section of the reservation. The first abandonment was of about 6,500 feet, belonging to the wharf property of G. A. Fuller, and the second of about three-quarters of an acre to several owners, in order that their boundary line might be brought to conform with the amended line of taking at the Longfellow Meadows.

Revere Beach.

A substantial addition to the Revere Beach Reservation was made by taking a block of land between the reservation and Ocean Avenue, between Chester Avenue and Sagamore Street. This is the land on a portion of which the bath-house now stands. A taking was also made of the soil of Chester Avenue, a private way from the reservation to the new location of the Boston, Revere Beach & Lynn Railroad, in order that the direct approach from the special station of that railroad to the bath-house might be under public control. A lot of land lying between the reservation and Ocean Avenue at its junction with Revere Street was also

acquired, to provide for future needs in the adjustment of the street and grade lines in the development of the reservation at this point.

Blue Hills.

Two small takings have been made additional to this reservation. The original boundary line between Randolph Avenue and Forest Street in Milton followed the town line and was not considered to be final. After the completion of a topographical survey an amended line was suggested by the Landscape Architects, along which at some future time a boundary road could be constructed. The new boundary, which has been established by a taking of 15 acres, brings into the reservation a lovely clump of pines. A parcel of land containing 27 acres has been taken in Milton, adjoining the Pine Tree Brook entrance on the west, which includes a woods road that will serve as an approach to the reservation until such time as it is found necessary to build a permanent road on the lines suggested by the Landscape Architects.

Middlesex Fells.

By chapter 74 of the Resolves of 1897 an appropriation was made for the rebuilding by the Commission on Inland Fisheries and Game of the State hatchery within the limits of the Middlesex Fells Reservation, provided arrangements could be made with the Park Commission for its location. The resolve seemed to indicate an intention that the two boards should co-operate in this matter. The old hatchery was located on private land adjoining the reservation, and was supplied with water from springs within the reservation. Investigation demonstrated that both the location of the springs and the plans for the development of the reservation made it desirable that the hatchery should be rebuilt in substantially its old location. The Park Commission, therefore, at the request of the Fish Commission, deemed it wise to take for this purpose the lot on which the old hatchery stood. The new building is being constructed of stone and faces the reservation on the line of the proposed boundary road. The Fish Commission have agreed that the cost of the land

shall be partly borne by the appropriation for rebuilding the hatchery, and that the building shall be maintained under such regulations as will make it a place of interest and instruction to persons visiting the reservation. In Stoneham a strip of land 50 feet in width and about 2,900 feet in length, extending from Park Street in Stoneham to the northerly boundary of the reservation at Bear Hill, has been deeded as a gift to the Commonwealth by the owners, Mr. Lyman Dike and Mr. Frank E. Chandler, for the purpose of enabling the Commission to carry out its understanding with the town, that, in return for the transfer of its Bear Hill Park, and upon the conveyance of these lands, an entrance over them to the reservation should be constructed.

Hemlock Gorge.

Two slight abandonments have been made of the lands in this reservation. In settling with the Newton Mills a readjustment of boundary necessitated the abandonment of about 8,000 feet of land which was claimed to be of great value to the mill property, but was not absolutely essential to the reservation. For the purpose of widening and improving the lines of Ellis Street, where it bounds upon the reservation, about 1,500 feet were contributed to the city of Newton.

As a result of these takings and abandonments, the areas of the various reservations, not including the King's Beach Reservation, which is to be transferred to the town of Swampscott, are as follows: —

Reservations.

	Area in Acres.
Blue Hills,	4,232.09
Middlesex Fells,*	1,802.37
Stony Brook,	460.64
Charles River,	245.69
Beaver Brook,	58.08
Hemlock Gorge,	24.46
Revere Beach,	66.19
	6,889.52

* Exclusive of 1,200 acres owned by local water boards, at present under the care and control of the Metropolitan Park Commission.

Revere Beach Parkway.

Under the Boulevard Act (chapter 288 of the Acts of 1894), lands have been taken for a parkway from the circle at the southern end of the Revere Beach Reservation to Winthrop Avenue in Revere, a distance of about 3,260 feet. This parkway crosses the new location of the Boston, Revere Beach & Lynn Railroad just north of the Beachmont station by an overhead bridge, and provides an approach to the Revere Beach Reservation from Winthrop Avenue without crossing the railroad at grade. The immediate necessity of building this bridge and crossing was due to the fact that the new location of the steam railroad crosses at this point the location of the Boston & Revere Electric Street Railway Company, and by the terms of the agreement between the Commonwealth and the Boston, Revere Beach & Lynn Railroad, the Commission were bound to make provision for carrying the tracks of the electric road over those of the steam railroad by means of such a bridge. Between the bridge and the Revere Beach Reservation sufficient land was taken to permit a rearrangement of several streets to conform with the changes made in the railroad locations.

Neponset River Parkway.

The West Roxbury Parkway connects the Arnold Arboretum with Bellevue Hill, and the Stony Brook Reservation extends from that point to within two miles of the Blue Hills. The connection of the Blue Hills with the Stony Brook Reservation and thus with the Boston Park System has always been regarded by the Commission as desirable, and several methods of making this connection have been considered by the Board. This summer a strip of land along the banks of the Neponset River, north from Paul's Bridge and lying partly in Milton and partly in Hyde Park, has been acquired. It contains about 17 acres, and seems essential to whichever route may hereafter be adopted.

Middlesex Fells Parkway.

In settlement with the New England Anderson Pressed Brick Company, a small parcel of land, lying between the construction and ownership lines, containing 997 feet, was abandoned as a part of the settlement, at the request of the company.

The following is a list of the parkways, and their lengths: —

	Miles.	Miles.
Blue Hills Parkway,		2.25
Middlesex Fells Parkway: —		
Fellsway,	2.18	
Fellsway East,	1.10	
Fellsway West,	1.04	
		4.32
Mystic Valley,		2.40
Revere Beach Parkway,		0.62
Neponset River Parkway,		0.40
Total,		9.99

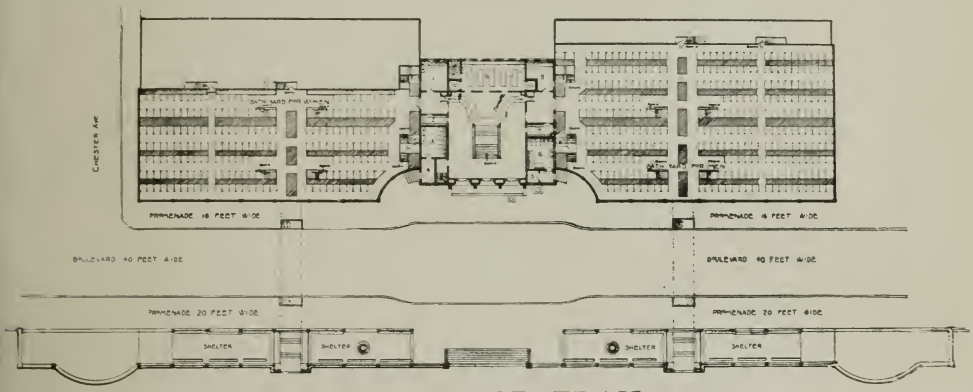
2. Revere Beach Bath-house.

In the work of development the Revere Beach Reservation has been the centre of the greatest activity during the year, and has largely occupied the attention of the Commission. The portion of this work which has involved the largest amount of detail has been the building and equipment of the Revere Beach Bath-house. This establishment is intended to take the place of the many private establishments which were crowded along the beach between the crest and high-water mark, at the time the reservation was acquired. These buildings had already been removed at the beginning of the year, and an agreement reached with the Boston, Revere Beach & Lynn Railroad to remove their tracks from the crest of the beach by the first day of May of this year. The Commission having decided to build the bath-house on the land side of the driveway, a location was selected at a point where, by raising the grade of the driveway, subways from the bath-house yards could be constructed under the driveway, thus allowing the bathers to reach the beach without crossing the road.

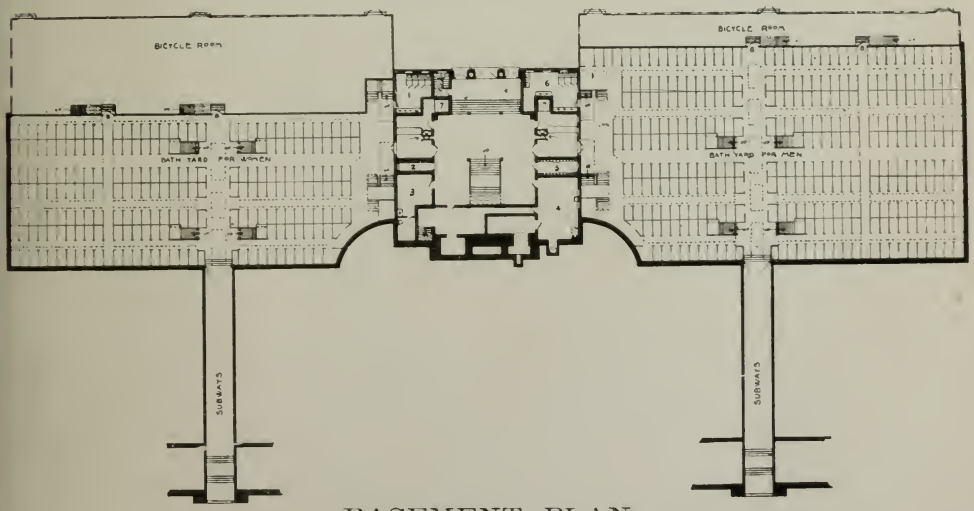
Plans prepared by Messrs. Stickney & Austin, architects, early in the year, were studied and considered by a subcommittee of the Commission, in connection with such information as they were able to obtain as to the requirements to be met. For this purpose the Commission caused inquiries to be made of persons experienced in the business of furnishing accommodations for surf bathing. Members of the Board visited and personally examined the bathing establishments at Atlantic City, Coney Island, Narragansett Pier and Newport, and much valuable information was thus obtained. The plans were finally approved by the Commission in February, and the building was erected substantially according to the design accepted.

The bathing establishment is intended only to provide the necessary conveniences for those who desire to enjoy surf bathing. It consists, in the first place, of a central administration building of brick, with terra-cotta trimmings, two stories in height on the beach front and with an additional basement story in the rear, made possible by the difference in grade between the reservation and the town highway, which bounds the bath-house lot on that side. This building is 80 feet in length and 75 feet in depth, and is covered by a square hip roof, slated, surmounted by a dome-shaped cupola. At the right and left of the administration building are the yards in which the dressing rooms are situated. These yards are enclosed on the beach front and ends by brick walls, and on the rear by bicycle-storage sheds, equipped for the storage of 1,225 bicycles. The dressing-rooms, of wood with tar and gravel roof, are built in two tiers or stories, so arranged that the passageways of the lower story come between the backs of the dressing-rooms of the second story, thus leaving all the passageways open to the sky, and providing light and air to each dressing-room. The floor of the upper tier corresponds in level with the first floor of the administration building, and the lower tier with the basement. The bath yard on the right of the administration building is reserved for men; it is 165 feet long by 93 feet wide, and contains 602 dressing-rooms. The bath yard on the left of the building is reserved for women; it is 165 feet long by 67 feet wide, and contains 402 dressing-rooms. On the lower

REVERE BEACH BATH HOUSE.



FIRST FLOOR PLAN.



BASEMENT PLAN.

tier the dressing-rooms are 4 feet by 6, and in the upper story 4 feet by 4½. Each room is furnished with a seat, hooks and mirror. From the basement story of each yard a subway 12 feet in width and 8 feet in height extends under the driveway and opens upon the beach.

The first floor of the administration building is occupied by the entrance hall, counters for sale of bath tickets and distribution of suits, rooms for deposit of valuables, toilet-rooms, and room for the storage of bathing suits. The basement floor contains hall of exit, toilet-rooms for bathers, rooms for the delivery of valuables, boiler-room, hospital, coal bunker and general storage room. The second and upper floor contains the laundry, office, repair and linen rooms and toilet-rooms for employees. The laundry is open to the dome, and here are placed the tanks from which hot and cold water are supplied.

The building is designed to provide for the handling of large numbers without confusion or danger, and the system may best be explained at this point. Persons desiring to use the building enter on the first floor from the driveway. Each half of the building is the counterpart of the other, and men turn to the right-hand and women to the left-hand of the entrance hall. Here the bather purchases a ticket at a semi-circular counter, entitling him to the use of suit, towel and dressing-room. The tickets are numbered consecutively, and the purchase is recorded by a cash register. Passing along the counter, on presenting his ticket he receives suit, towel and key. He then passes through a turnstile, where the ticket is taken up by the gate-keeper. This brings him into an ante-room leading to the bath yard; here, if he chooses, he deposits his valuables at a window on the right, in an envelope which he seals, writing his name across the back, and receiving therefor a numbered check. The bath-house key is on a ring of rubber large enough to draw over the head, and the valuables check is suspended on a snap device which permits of its being attached to the same ring with the key. Passing into the bath yard, the attendant directs him to a dressing-room; when dressed for the bath, the bather passes through the subway to the beach. On returning from the water his key and bath suit are a passport

to the police officer who guards the entrance to the subway. Before entering his dressing-room he has the privilege of using the shower-baths at the two sides of the subway. Resuming his street apparel, the bather leaves his wet suit and towel in the bath-room, to be gathered up by the attendants, and passes out of the yard into the basement floor of the administration building, leaving his key with the guardian at the turnstile. Turning to the left, he presents his valuables check at a window, and identifies himself by writing his name in a book. The envelope containing his valuables has been sent down from the floor above, and is then delivered to him. He can leave the building either by the rear door on the town highway, or return to the entrance hall by a broad stairway.

The wet bathing suits and towels are gathered up and sent by elevators to the laundry. There they are washed, dried, ironed and returned by elevators to the storage rooms in the rear of the counters. The keys, as fast as delivered up, are returned from the basement exits to the first floor, where they are placed on the key rack, indicating that the room is again ready to be let. The only comment to be made on the system is that in its practical working it has been eminently satisfactory.

The plans for the bath-house also included plans for the erection of three series of shelter buildings on the water side of the driveway. One of these is located directly in front of the bath-house, furnishing an opportunity for the public to view the bathing. The foundations are of stone and concrete, the framework of iron and the roofs slated. This shelter is divided into two portions, each 140 feet in length by 20 feet in width, leaving an open space between and directly opposite the entrance to the administration building, and providing an approach to the beach from the driveway by a broad flight of steps. The entrances to the subways from the beach are combined with these shelters. Another shelter was built at the site of the old Strathmore Hotel, between Beach Street and Shirley Avenue, and is of similar plan, except that an ornamental band-stand is placed between the two shelter buildings. The third shelter was planned

for a space opposite Revere Street, but it was decided subsequently not to build it the present season.

Although the plans had been approved, the state of the appropriations had been so affected by the legislation of the previous year that the Commission deemed it wise not to proceed further until the Legislature then in session had passed an act assuring a sufficient appropriation for the building of the bath-house. Such an act having been passed early in March, a number of responsible contractors were invited to submit proposals for the building of the bath-house and the three shelters. Bids were, however, first obtained from the following persons for the various sub-contracts connected with the building, the Commission reserving the right to approve sub-contractors: —

Sub-bidders.

Plumbing: —	
Wm. Lamb & Co.,	$6,895 00
W. A. Pearce,	5,846 22
Henry Hussy & Co.,	5,143 00
I. N. Tucker,	5,079 00
T. Costello & Co.,	4,089 00
L. E. O'Mealy,	3,853 00
Iron and steel: —	
Boston Steel and Iron Company,	19,986 00
Norton Iron Company,	17,821 00
Boston Bridge Works,	16,161 00
Roofing: —	
C. S. Parker's Sons,	14,517 00
John Farquhar's Sons,	13,805 00
Granite: —	
J. J. O'Brien & Co,	28,000 00
Pigeon Hill Granite Company,	16,908 00
Rockport Granite Company,	16,418 00
Freestone: —	
E. F. Meany & Co.,	1,000 00
F. G. Coughlan & Co.,	740 00
Terra cotta: —	
Perth Amboy Terra Cotta Company,	705 00
New York Terra Cotta Company,	640 00
Excelsior Terra Cotta Company,	600 00

These figures were furnished to persons bidding on the entire contract, and the following proposals were received: —

General Bidders.

L. P. Soule & Son,	$178,880 00
Woodbury & Leighton,	172,123 00
Connery & Wentworth,	169,997 00
H. P. Cummings & Co.,	149,890 00
Wm. T. Eaton,	136,230 00

The contract was awarded on March 17 to Wm. T. Eaton, the lowest bidder. Subsequently, the contract was modified by the decision of the Board not to build the shelter at Revere Street, and to substitute for granite, marble composite manufactured by the Murdock Parlor Grate Company. These and other minor modifications reduced the consideration to $119,201. During the course of construction extras were added to the amount of $3,380.56 and deductions made to the extent of $4,377.40, leaving the net amount paid on this contract $118,204.16. By the terms of the contract the administration building and the accompanying shelter were to be completed and ready for use within 122 days from the date on which the levels were given by the engineer. This brought the date to the twenty-ninth day of July; one additional day was granted the contractor, on account of changes required by the Commission. On the 31st of July the Commission opened the bath-house to the public for inspection, and on the following day it was put in regular use.

The laundry and other machinery for the bath-house was supplied by the Empire Laundry Machinery Company. The principal items of this contract were as follows: three washing-machines, one tumbler, four extractors, two mangles, two drying-rooms, one horizontal engine, one forty-horse-power boiler, one nine-thousand-gallon tank, one two-thousand-gallon tank, one steam pump, two elevators, piping, shafting, hangers, pulley and belting, stationary tubs, soap-tank, tables, laundry baskets, and all fittings necessary for installing the laundry and power plant in complete running order.

The laundry plant was especially designed and constructed to meet the requirements of the bath-house, and the system pursued is as follows: —

After use, the wet bath suits are first washed in the washing machines and are then placed in the centrifugal wringers; they are next passed through mangles to further dry them, and are then hung in the drying-rooms. When practically

dry they are again passed through mangles, folded, and then go to the repair-room for examination. The laundry plant has a capacity of 500 suits an hour, thus enabling the same suits to be used several times on the same day without discomfort or danger to health. The amount of the contract for the above-described work was $8,964.07.

The water for the laundry, toilet-rooms, drinking-fountains and fire-protective apparatus is supplied from 12 driven wells, analyses and tests having first demonstrated that excellent water could thus be obtained in sufficient quantities. The wells were driven by Messrs. B. F. Smith & Bro., who guarantee that the supply shall equal 125 gallons per minute, and the contract price was $2,500.

The administration building, bath yards, subways, front and rear entrances and bath-yard walls are lighted with incandescent electric lights. The lights are all controlled from a large switch-board in the administration building, so arranged that any section of the line can be thrown on and off at will. The total number of incandescent lamps is 1,331. The contract for wiring, switch-board and necessary connections was awarded to John S. Potter, for the sum of $5,376.63, after the following canvass of bids: —

Edwin C. Lewis,	$8,153 00
Boston Electric Company,	7,500 00
Clark & Mills,	7,200 00
Lord Electric Company,	6,914 00
Godfrey Electrical Construction Company,	6,750 00
Hawkes Electric Company,	6,125 00
Thomas W. Byrne,	5,595 21
John S. Potter,	5,378 63

The same firm were also awarded the contract for installing the wiring system for lighting the Revere Beach Driveway and Parkway, on the following canvass of bids, which were submitted at the same time: —

Edwin C. Lewis,	$11,978 00
Boston Electric Company,	11,800 00
Thomas W. Byrne,	8,082 65
Godfrey Electrical Construction Company,	7,950 00
Hawkes Electric Company,	7,550 00
Clark & Mills,	7,400 00
Lord Electric Company,	5,426 00
John S. Potter,	4,595 50

Twelve ornamental electric-light poles, to conform with the plans for the two shelter buildings, were purchased of the Boston Insulated Pole Company, at a cost of $1,380; and 48 plain poles, for use on the driveway and parkway, were purchased of the same company, for $2,160.

The contract for bathing suits, towels, etc., for the bath-house was awarded to A. Shuman & Co., of Boston, on the recommendation of an expert employed for the purpose of examining and reporting on the samples submitted by several houses engaged in this line of business. The quantities and prices decided upon were as follows: —

	Per Dozen.
2,800 men's two-piece knit bathing suits,	$8 80
1,400 women's two-piece flannel bathing suits,	21 50
300 boys' bathing trunks,	3 00
200 women's knit bathing stockings (black),	1 10
6,000 Terry cloth towels, marked M. P. C.,	2 35

It was found necessary during the summer to add small quantities of the most common sizes, and also to have some suits made of extra large size.

The cost of the bath-house, including furnishings and bath suits, is substantially as follows: —

Bath-house.

Building (without the shelters),	$95,120 16
Architects,	6,884 21
Laundry plant and machinery,	8,964 07
Electric wiring and fixtures,	5,378 63
Driven wells,	2,500 00
Bicycle holders,	133 33
Rafts,	229 00
Cash registers,	384 20
Mirrors,	303 78
Safe,	200 00
Furniture,	384 40
Bulkhead, storm doors, etc.,	103 25
Rubber rings for keys,	53 64
Iron work,	89 39
Radiator,	65 00
Brushes and combs	20 00
Plumbing (extra),	29 86
Miscellaneous,	49 28
Bath suits,	7,022 81
Board walks in subways,	95 42
Total,	$128,010 43

The building of the bath-house and the general work of development in this reservation was carried on during the year under the immediate direction of members of the Commission, acting as a sub-committee.

3. Administration.

The system of administration originally adopted by the Commission has not been changed. The chief executive officer of the Commission is the Secretary, to whom the heads of the several departments report as occasion demands. A small clerical force is employed in keeping the necessary records of the Commission's work. The following departments have been established: Landscape Architects, Engineering, Law, Claims, Superintendence.

Landscape Architects' Department.

The death of Charles Eliot, on March 25, 1897, was noted in the records of this Commission as follows: —

Resolved, That in the death of Charles Eliot, Landscape Architect, the Metropolitan Park Commission sustains a great loss. Mr. Eliot was a skilful adviser in the work of the Commission, and a man of high character and of amiable temper, which made him a delightful companion and co-laborer. His knowledge of the landscape possibilities of the public reservations cannot be replaced. His early and constant connection with our work entitles him more than any other person to the title of father of the Metropolitan Park System, which will be a memorial of his short but eminently fruitful professional life.

Mr. Eliot was the landscape adviser of the preliminary Metropolitan Park Commission, and later, as a member of the firm of Olmsted, Olmsted & Eliot, the principal adviser of the present Commission. His long connection with the Commission and his complete knowledge of the details of its work brought him into close connection with all the departments. Combined with a quiet and genial disposition, he had to an unusual degree the faculty of impressing his ideas upon others and of communicating to them something of his own enthusiasm. Every one connected with the work of the Commission feels the loss of his ample knowledge, but most

of all of the friendly association which was brought to an end by his death.

The report of the Landscape Architects' Department is printed as usual as an Appendix to this report.

Engineering Department.

The Engineering Department has continued under the direction of Mr. William T. Pierce, whose report, giving the details in regard to the work of his department, is printed herewith. Under his supervision the Revere Beach Driveway along the crest of the beach has been built from the circle at the southern extremity of the reservation to Revere Street. Beyond this point the plans for the development of the driveway have been suspended, awaiting the decision of the State Highway Commission as to the lines of the proposed State Highway from Boston to Newburyport, which is planned to parallel the reservation from Revere Street to the Point of Pines. The portion of the driveway built is about one mile in length. It consists of a sidewalk 20 feet wide on the land side, abutting on the private properties, a macadamized driveway 40 feet wide and a promenade on the ocean side 20 feet wide. The sidewalk and promenade are bordered with edge stones and gutters of concrete. It is drained by catch-basins at frequent intervals. It is lighted by 32 electric arc lights, in addition to the lights upon the shelter buildings and bath-house walls, placed upon insulated poles. The electric-light wires are carried in conduits under ground, so arranged that the number of lights in use can be controlled from the switch-board at the bath-house. The current for lighting is supplied under a contract with the Suburban Gas and Electric Company, having its plant in Revere, just outside the limits of the reservation.

On May 1, in accordance with its agreement, the Boston, Revere Beach & Lynn Railroad abandoned its tracks within the reservation, and transferred the running of its trains to its new road-bed outside the reservation. On the same day work upon the driveway began, and was prosecuted diligently through the summer. The removal of the railroad was followed by that of the poles and wires of the New Eng-

land Telephone Company, and later the old Strathmore bulkhead was taken down. The work of building the driveway was accepted, and it was formally opened to all kinds of travel, on November 10. The greater portion of it, however, was in actual use by pedestrians and bicyclists from the time the bath-house was opened.

Other work in this reservation under the direction of the Engineer was the building of a sewer from Revere to Bath streets, where it connects with the town system. This sewer accommodates the bath-house, and abutting owners on the reservation are allowed to enter it on payment of the same charges as are required in like cases by the town.

In the Stony Brook Reservation the first permanent road is being built under the direction of the Engineer. It is about two miles in length, and for the present will be built to the width of 20 feet. Leaving Washington Street in West Roxbury, opposite Bellevue Hill, it quickly descends to the banks of Turtle Pond, and thence traverses the centre of the reservation to Glenwood Avenue in Hyde Park. This road at the Washington Street end will connect with the proposed roadway in the West Roxbury Parkway, which joins this reservation to the Arnold Arboretum of the Boston Park System.

At the date of the last report the driveway in the Mystic Valley Parkway had been finished to sub-grade, and contractors were engaged in the work of grading and building walks. This work was completed the 1st of July, and the contract let for surfacing the driveway. A water pipe was first laid for supplying the necessary stand-pipes for watering. The surfacing was completed and the driveway opened to the public on September 11. The parkway is lighted by 66 self-generating Welsbach street lights, set in lamp posts placed about 200 feet apart, thus avoiding the necessity of wires or gas pipes.

That portion of the Middlesex Fells Parkway known as Fellsway East, extending from Pleasant Street, Malden, to the Middlesex Fells Reservation, has been finished and in use for some time. Work on that portion known as Fellsway, extending from Broadway Park in Somerville to Pleasant Street in Malden and Salem Street in Medford, was

begun last year and has continued through the winter and summer. An iron bridge with stone abutments and earth approaches has been built over the Medford branch of the Boston & Maine Railroad. The work on this section of the parkway is now well advanced, and should be completed by the early part of next summer. Work on the remaining portion of this parkway, known as Fellsway West, and extending from Salem Street to Pine Hill in the Medford section of the Middlesex Fells, was begun in November, and will be completed next summer.

In connection with the building of this parkway, a contract was made with the city of Somerville for the building of a drain across the head of the parkway in that city, for the common use of the parkway and city streets, and arrangements were made with the city for changes in the grade of Middlesex Avenue at its junction with the parkway.

A contract has been made this year for building that section of the Blue Hills Parkway which lies between the Neponset River at Mattapan and Brook Road in Milton. Work has begun under this contract, and the easterly portion of this section will be practically completed this year, and the remaining portion next spring.

The Revere Beach Parkway, extending from the southern end of the reservation to Winthrop Avenue in Revere, has been contracted for and built to sub-grade. In connection with this work an iron bridge with granite abutments was built over the location of the Boston, Revere Beach & Lynn Railroad, in the early summer. A street has also been built extending Ocean Avenue in Revere to the parkway, the extension being intended to take the place of that portion of Ocean Avenue which was discontinued by the laying out of the Revere Beach Reservation.

Plans having been adopted for the development of that portion of the Charles River Reservation in Boston which lies between the end of Market Street, Brighton, and North Harvard Street in Allston, proposals have been invited for the carrying out of a part of the work under the direction of the Engineer. The plans call for a road along the boundary of the reservation, starting from a point in Western Avenue, opposite Market Street, and following along the line of

private ownership until it reaches Longfellow Meadow, and then following the general curve of the river at this point until it reaches North Harvard Street between the river and Soldiers' Field, the athletic grounds of Harvard College. Parallel with this boundary road, at a lower level, a speedway is to be built 50 feet in width and a trifle over 1 mile in length. This is designed to be used only in one direction, and is intersected by no streets. Between the speedway and the river the design calls for a double bicycle path, thus giving a course of two miles. Suggestions are also made on the plan for the use of the remaining open spaces for athletic purposes. Along the edge of the river a dike is to be constructed which will protect the low lands from being flowed during the occurrence of extreme high tides. Drainage is provided for through tide gates placed in the dike. It is intended at present to build the boundary road, speedway and dike, and much of the work can be carried on during the winter months.

In addition to supervision of the work of construction, the Engineer has been largely occupied during the past eight months in the preparation of maps, topographical surveys and acquirement of necessary data for the information of the Commission, and for the use of the Landscape Architects in the preparation of studies for proposed takings. There has also been the usual work of preparing plans of all kinds, including plans to accompany takings and abandonments, plans for the use of the Attorney-General's Department in the preparation and trial of cases, property plans for the information of the Conveyancing and Claims Department, and the like. All construction plans and first drafts of specifications have been prepared by this department. The Engineer's report will give an excellent idea of the amount of work accomplished.

Law Department.

Under chapter 490 of the Acts of 1896 the Attorney-General's Department has charge of the legal matters of this Commission. Direct charge of these matters was placed by the Attorney-General in the hands of Assistant Attorney-General Travis, who acts for this department in all matters

in litigation, and has general supervision of its Law Department. Conveyancing and general office work are in the charge of Frederic S. Goodwin, Esq., under the direction of the Attorney-General's Department.

Claim Department.

The Claim Department continues in charge of George Lyman Rogers, Esq., and considerable progress has been made during the past year in the disposition of outstanding claims for lands taken by this Commission. During the year 209 claims have been settled without suit, representing an expenditure of $524,800.35. In addition to these settlements, 34 claims, amounting to $218,112.43, have been disposed of in the Attorney-General's Department after suit had been brought. Of these 34 cases, 23 were disposed of before trial and 11 were the awards of the tribunal before whom the cases were tried. There still remain to be adjusted 198 claims, of which 117 are in suit. This number seems somewhat large, but is accounted for by the fact that 39 of these claims are represented by two claimants, the large number being due to the fact that many of them are for small parcels of land taken for the new location of the railroad in Revere. It is likely that a large proportion of these claims will be disposed of within a few months either by trial or settlement.

Superintendence.

The Department of Superintendence is under the direct supervision of the Secretary, each reservation being in the charge of a local superintendent, reporting every Friday to the Secretary and as often during the week as occasion requires.

The Blue Hills Reservation is a forest reservation of 4,232 acres. Two highways, Randolph Avenue and Hillside Street, cross the reservation from north to south at different points. One carriage road has been built across the reservation from the foot of Great Blue Hill to Quincy, a distance of about 8 miles; it is used both for pleasure travel and for purposes of administration, and is the only means of crossing the reservation from east to west. There are also in this reservation

about 13 miles of old wood roads, which are kept cleared as bridle-paths and serve as fireguards. The boundary is also kept cut out, to prevent the encroachment of fires from without. The Blue Hills are not as yet easy of access from the crowded part of the district, and although each year sees an increased number of visitors, the important work of this reservation is protection of the woods against fire, and such forestry work as the Commission has decided upon. The reservation is in charge of Superintendent Frank Dings, who has had under him a labor force of 15 men and 3 regular mounted police officers. No serious fire has occurred, but the prompt extinguishment of several, either within or on the borders of the reservation, indicates that nothing but constant and watchful care prevents the recurrence of the disastrous fires which have in former years denuded these beautiful hills. A small amount of forestry work has been done under the direction of the Landscape Architects. Considerable brush and other inflammable material gathered during the past two winters was burned last winter, when the snow permitted the work to be done without danger. In the spring the through administration road was repaired, and the sloping back of the rough banks and gravelling of the road, which was partly done the previous year, was carried on three miles further to completion. The rank growth of last spring made it necessary to cut out again nearly all of the bridle-paths. The most dangerous point for fire in this reservation has been along the north-eastern boundary, in Quincy, on account of the neighborhood of the granite railway and the difficulty of reaching a fire in this vicinity from the administration road or the highways. A bridle-path over which a fire wagon can be hauled has been constructed for about one mile and a half, following substantially the boundary of the reservation from the Pine Tree Brook entrance through Saw Cut Notch, and in the spring will be continued to Bunker Hill Lane in Quincy.

The two points most visited in the reservation are the summit of the Great Blue Hill and Hoosicwhisick or Houghton's Pond. At the foot of the hill provision has been made for the checking of bicycles on Saturdays, holidays and Sundays during the summer months. At the pond the old barn has

been repaired for the use of the public, an additional bath-house and boat landing built and two additional boats put on the pond. Plank walks have also been laid to the bath-houses and across Coon Hollow Brook to the ball field. At the farmhouse on Hillside Street, which has served as head-quarters, there has always been an insufficient supply of water during the summer. A satisfactory well has been located to the west of the office, pipes laid to the house, office and barn, and a drinking-trough for horses placed on the roadside. The buildings on the Lewin place at the foot of Great Blue Hill were torn down in the summer, and plans prepared by Andrews, Jaques & Rantoul, architects, for a house suitable for purposes of administration, to be built on the same foundation. The following bids were obtained for building the house: —

Kellar Brothers, West Newton, . .	$5,500 00
A. H. Bailey, Brookline, ...	5,335 00
M. Stewart, Readville, ...	4,680 00
P. O'Hearn, Milton, ...	4,655 00

The contract was awarded to P. O'Hearn, and the house will be completed early in the winter.

The lands taken for the Blue Hills Parkway are in the general care of the Superintendent of the Blue Hills. Arrangements, however, have been made with the town of Milton as to the portions of former highways included therein, by which they are watered, lighted and policed in connection with the town work. The town being engaged in rebuilding Canton Avenue, an agreement was made by which a portion of that avenue, 646 feet in length, was rebuilt at the same time and in the same manner, at a cost of $1,520. General repairs to the road have been made by the forces from the Blue Hills Reservation.

The conditions surrounding the Middlesex Fells Reservation, though essentially a forest reservation, are different from those of the Blue Hills. Within its boundaries are contained not only 1,800 acres acquired by the Park Commission, but also 1,200 acres which had been previously acquired by the water boards of the surrounding towns. There also remains the Langwood Hotel property and several

private estates which no authority has deemed it essential to acquire as public holdings. In addition to about 13 miles of wood roads and bridle-paths, the reservation is traversed in all directions by nearly 8 miles of highways belonging to the adjoining cities and towns. This confusion of ownership will be simplified somewhat by the proposed taking of substantially all the water board lands by the Metropolitan Water Board in the name of the Commonwealth.

The same danger of fire has to be guarded against in the Fells as in the Blue Hills, and the accessibility of the reservation from the surrounding towns and cities make the care of the roads and the policing of the reservation important. The Superintendent is Charles P. Price, and the force employed has averaged 15 men. The police force includes the officers used on the Middlesex Fells and the Mystic Valley Parkways. Four are on duty in the Middlesex Fells, three in the Mystic Valley Parkway and one on Fellsway East.

Three pieces of road have been built during the year. One of them was a piece of boundary road 2,425 feet in length, running from the old site of the Red Mills to the head of Emerson Street in Melrose, and thus providing an agreeable and direct entrance to the Fells from the railroad station and the centre of that town. At the southern boundary of the Fells, near Pine Hill in Medford, a short piece of boundary road 1,400 feet in length has been built, connecting Forest Street with roads which, though not adapted for crowded travel, afford a charming drive through this section of the Fells to Winchester. This piece of road is on permanent lines, and its continuation along the boundary line to Mt. Vernon Street in Winchester in the near future is desirable. During the year the pipes of the Metropolitan Water Board, intended to connect with the proposed high-service reservoir in the easterly section of the Fells, have been laid through a portion of Fellsway East and through Jerry Jingle Notch. This necessitated a rebuilding of the existing road through the Notch, and advantage of this fact was taken to relocate it on improved lines for a distance of about 1,400 feet. Part of the work was done under contract by the contractors of the Metropolitan Water Board and the

remainder by the regular force of the reservation. In addition to repairing the roads in the reservation, the entire fire-guard line around it has been cut out and several miles of similar work done in the interior, amounting to 16¼ miles. A private telephone line to the office from the summit of Bear Hill has been erected, and proves to be a valuable aid to both the police and fire patrol. Many old buildings have been removed from the reservation. The dam at Bellevue Pond near the Medford boundary has been repaired, and the pond will be used for skating the coming winter. Four dwelling-houses have been retained, one for headquarters and the other three as homes for the police officers, who are thus readily within call at all times. A small amount of forestry work was done in this reservation last spring. Several forest fires have been extinguished during the year before any serious damage had occurred.

Fellsway East and the Mystic Valley parkways are also under the charge of the Superintendent of the Fells. Fellsway East has been lighted and watered by the city of Malden, under contracts made through the street commissioners of that city. Two men have been employed in keeping the roadway in repair, and the planting strips mowed and in good condition. The use of hand-carts has been found useful both in the Fells and on the parkways in the care and repair of roads. The Mystic Valley Parkway was opened on September 11, and since that time has been used by large numbers of people. All kinds of pleasure travel is to be seen upon it, and large numbers of pedestrians gather on the walks to watch the passing show or to enjoy the lovely view of the ponds. Estimates place the numbers visiting this parkway on the day following its opening at 5000. Two laborers have been employed in keeping the roadway in repair. A small shelter and tool-house has been built midway between Winchester and West Medford.

The Stony Brook Reservation is in charge of Albert N. Habberley. A force of four laborers is regularly employed, which is temporarily enlarged during the fire season. The only road through this reservation is a mere woods road, somewhat improved and made passable for carriages if carefully driven. During the year the Superintendent has cut

out turn-outs at frequent intervals, and considerably improved the condition of the road by repairs. At one point the road left the reservation, passing over private lands and entering the reservation again about a thousand feet beyond. Between these two points a piece of boundary road has been built by the regular force of the reservation, and, as the piece of road is on permanent lines, it has been built substantially, although not to full width. This reservation is constantly threatened with fires from without, and each year and sometimes twice a year woods fires approaching from the southwest burn to the boundary line. This year both east and west boundary lines have been mowed out to a width of 20 feet, and the west boundary line has been made roughly passable. The old bridle-paths in the reservation have been kept clear and several new ones on the lines of old woods roads have been opened. All buildings have been removed from the reservation except those required for administration. The shed of the office building has been altered, and now serves as a stable where the Superintendent's horse and the fire wagon are kept. A regular and a special officer live in houses on the reservation, one at the Boston, the other at the Hyde Park, boundary. A house for the Superintendent is in course of erection next to the office in Hyde Park, from plans prepared by Mr. Arthur F. Gray, architect. The contractor to whom the contract was first awarded having failed to furnish the necessary bond, new bids were obtained as follows: —

H. H. Hunt, ...	$5,376 00
Cutting, Bardwell & Co., ...	5,100 00
William T. Eaton, ...	4,900 00
Malcolm Stewart, ...	4,896 00
J. H. Burt & Co., ...	4,441 00

The contract was awarded to Messrs. J. H. Burt & Co., and the house will be finished this winter. The pond in the rear of the office was again kept clear during the winter and largely used for skating. During the summer this shallow pond is drained, but a small pond was maintained this season at the upper end in the rear of the office, and used by the Superintendent for the cultivation of some unusual specimens of water lilies, which proved of much interest to those

who saw them. The ball field at Happy Valley has been kept in condition and has been largely used by the children of Hyde Park. The boys have also had the use of the bath-house on Turtle Pond. The completion of the interior road now being built through the reservation will give the public an opportunity of enjoying the peculiar beauty of the Stony Brook Woods.

The Beaver Brook Reservation is in charge of Robert Elder. No laborers are employed in this reservation except as occasion demands. The widening and grading of North Street by the town of Belmont left the boundary of the reservation on this street in an extremely rough condition. It became necessary to entirely regrade the bank, from the entrance of the reservation to the crossing of the brook by Trapelo Road. This was done last spring, and a portion of the bank resodded. It will take considerable time, however, for this portion of the reservation to regain its natural appearance. In the grove near the oaks a drinking fountain has been placed, which is supplied with water by the city of Waltham. The oaks have been carefully trimmed and cared for under expert direction from the office of the Landscape Architects. The ponds have been enjoyed by skaters in the winter, and large numbers of people have visited the reservation during the summer.

The Hemlock Gorge Reservation is in charge of Henry H. Williams. In the summer months large numbers of people visit Echo Bridge and the grove, and the time of the Superintendent is occupied in the general care of the reservation and police duty. The trees have been trimmed where necessary, fences built and painted, drain pipe laid, and the grounds around the Superintendent's house graded and planted. The city of Newton has built Boylston Street to its full width along the reservation, and widened Ellis Street at its junction with Boylston Street. This has made it possible to grade this corner of the reservation, from which several buildings had earlier been removed.

The Revere Beach Reservation was acquired in September, 1895, and at that time was encumbered by the location of a railroad along the ridge of the beach and wooden buildings crowded between the railroad and high-water mark. These

buildings were used as restaurants, bathing establishments and boarding-houses. In the spring of 1896 these buildings were taken possession of by the Commission, and the reservation placed in charge of a superintendent; rules and regulations were made, governing the use of the reservation; a police force organized; and the buildings leased for the summer largely to the former tenants, under conditions which allowed the lessees to provide accommodations for the public. The control which the Commission was thus enabled to exercise over the entire beach resulted in the maintenance of better order than had before prevailed, and was followed by a change in the character of the crowds frequenting the beach and a marked increase in the number of people, especially of women and children, visiting the reservation. May 1, 1897, having been fixed as the date of removal of the railroad from the reservation, the old buildings were sold, and at the beginning of the year had been moved or torn down. The Superintendent, Herbert W. West, was occupied during the winter and early spring in clearing from the beach the old posts, piling and other rubbish which was left from these old buildings, or had accumulated during the years when the beach had been private property. In this work he had the aid of a small police force and a few laborers employed as occasion required. A difficult piece of work successfully performed was the removal of a large number of iron tubes which had served to support, some years ago, an old pier, and, from having been broken off below the ordinary low-water line, were a menace to bathers. Much of this work had to be done in the water and during the low run of the tide. The two important branches of work in this reservation are the running of the bath-house and the maintenance of an efficient police service. A large part of the Superintendent's time in the early part of the summer was occupied in preparation for the opening of the new bath-house, familiarizing himself with the proposed system of running it, the furnishings required, employment of help and other necessary details.

The bath-house was opened on August 1 and closed on September 19. The number of bathers using the bath-house during the period was as follows: males, 39,523; females, 22,612; total, 62,135. The largest number of bathers on

any one day was on Labor Day, September 6 (4,242), and the smallest on August 5 (5). During the same period 5,765 bicycles were checked in the bicycle room connected with the bath-house. The number of employees on week days was 63, which on holidays and Sundays was increased to 83. An experienced swimmer was employed as "life patrol" during a portion of the season, and on several occasions proved his usefulness. A boat was kept ready, and employees trained for emergencies answered to a call bell when needed. Twenty-eight persons were treated in the emergency room. One death occurred in the water, probably from natural causes, and under such circumstances that no blame attached to any employees of the State. Good order prevailed in the bath-house, and the arrangements gave general satisfaction.

During certain hours on pleasant Saturdays, holidays and Sundays the accommodations proved insufficient for the number of people desiring to make use of them. The number of dressing-rooms can be considerably increased at a comparatively small expenditure, if the Commission deem it wise, taking into consideration the increased cost of maintenance involved. The prices charged at the bath-house from August 1 to August 16 were as follows: —

	Cents.
For use of bathing suit, towel and dressing-room, . .	25
For use of towel and dressing-room, ...	15
For use of children's trunks and dressing-room, . .	10
For checking bicycle, ...	5

On August 16 the price for use of bathing suit, towel and dressing-room was reduced to fifteen cents, as an experiment. The total receipts from the bath-house were $10,643.75. The cost of maintenance was $8,901.25, divided as follows: —

Bath-house Maintenance.

Pay rolls, ...	$5,704 85
Light, ...	1,471 74
Alterations and repairs, ...	335 88
Stationery, ...	309 87
Medicines and medical attendance, . . .	195 60
Blankets, cloth, yarn, etc., ...	86 33
Amount carried forward, ...	$8,104 27

REVERE BEACH RESERVATION.

Bath-house, Shelters and Beach.

Amount brought forward, ...	$8,104 27
Hardware, ...	154 02
Lanterns, buoys, etc., ...	101 30
Flags, ...	25 75
Rubber aprons and boots, ...	10 50
Disinfectant, ...	50 00
Telephones, ...	73 48
Coal, ...	216 78
Fire extinguishers, ...	97 65
Miscellaneous, ...	67 50
	$8,901 25

Considering the fact that these expenses do not include any charges for police service or allowance for deterioration of building, machinery or bath suits, it is apparent that no further reduction of prices can be made if the bath-house is to provide an income sufficient for its maintenance.

Despite the fact that the bath-house was not completed and that the ridge of the beach was encumbered by the work of contractors in building the driveway, the beach was, from the beginning of the summer months, visited on pleasant days by large numbers of people. As soon as any section of the driveway was passable it was at once occupied by pedestrians and bicyclists, and after the bath-house was opened it became a common sight to see the beach black with people from the water's edge to the line of private property. From figures furnished by transportation companies, it is certain that on several days sixty thousand people visited the reservation, and estimates far exceeding that number have been made by experienced persons. A police force of twelve men was maintained during the summer. The Superintendent was assisted in this work by the appointment of one member of the force as sergeant. On several occasions it became necessary to transfer temporarily officers from the other reservations. The work of the police force in this reservation is entitled to special commendation. The enormous crowds have been handled with little friction and the infractions of the rules have been incredibly small. The number of arrests in this reservation for the entire year was only thirty-three.

A few laborers have been employed in this reservation, mostly in the care of the roadway and in keeping the beach clear from rubbish. On two occasions refuse from the dump scows of the Boston street department has been blown in upon this shore. The same thing has occurred at King's Beach in Swampscott. It is to be hoped that the practice of using the ocean as a common dump by cities and towns along this coast will before long become obsolete.

During the summer canvas-topped shelters have been erected on the sands and have been used largely by children during the warm days. Two large diving rafts were also built under the direction of the Superintendent, and anchored in front of the bath-house. The closing of the bath-house for the winter has been a work of a good deal of detail, involving, as it did, the packing away of suits and protecting of the machinery, piping, electric wires, etc., against possible damage. Considerable work was done of the same nature in and about the shelters.

The Commission has passed a vote imposing the following restrictions on the use of lands abutting on the Revere Beach Reservation, as a condition of granting to the owners the right to use the driveway in connection with their lands: —

1. No building erected or placed upon said premises shall be used for a livery or public stable, or for any mechanical or manufacturing purposes, nor exceed five stories in height above the basement or cellar, nor exceed seventy feet in height from the mean grade of the edgestone or sidewalk in front to the ceiling of the extreme upper story, and no roof shall be used for laundry or clothes-drying purposes.

2. No wooden apartment house of more than three stories, nor wooden block consisting of more than two houses, and no wooden house costing less than three thousand five hundred dollars, nor brick or stone house costing less than six thousand dollars, nor wooden apartment house of two stories costing less than five thousand dollars, nor wooden apartment house of three stories costing less than six thousand dollars, nor apartment house of brick or stone costing less than three thousand dollars per suite of apartments, exclusive, in each case, of the cost of the land, shall be erected or placed upon said restricted premises.

3. No signs shall be displayed on the said land or affixed to the buildings thereon, whether of the business therein conducted or any

advertisement, poster, placard or notice, which can be seen from the limits of the said reservation, unless the previous written consent of this Commission is obtained.

4. No nuisance shall be committed or suffered upon said lands, and all laws, ordinances, by-laws, rules and regulations of the Commonwealth of Massachusetts, town of Revere and Metropolitan Park Commission, respectively, which now are or may hereafter become applicable to said lands, shall be observed and performed by the owners or occupants of said lands.

5. No intoxicating liquors, as defined in the statutes of this Commonwealth, shall be sold, exposed or offered for sale on said premises, unless proper licenses are first obtained from the authorities authorized to grant such licenses, and, in addition thereto, the consent in writing of this Commission is also obtained.

All of the above regulations and restrictions shall be enforcible in equity, and the right to enter upon said reservation from said lands shall, upon breach of any of the same, be suspended so long as said breach continues.

The following rules governing the use of signs were also adopted: —

1. All signs must be made of wood, metal or glass, and the letters thereon shall not exceed ten inches in vertical height.

2. All signs must be firmly secured to the buildings to which they are affixed, and projecting or swinging signs will not be permitted.

3. The wording of the signs shall be confined to the advertising of the business carried on in the building to which the same are affixed, and the names of the persons or corporations engaged therein.

4. Advertising on vacant lots or bill boards, and the painting of signs directly on the walls of buildings, will not be permitted.

A marked improvement in the character of the buildings on the abutting properties is already perceptible, and with the increasing value of the land is likely to continue.

The Charles River and King's Beach reservations call for slight mention. In the former, no development having been undertaken, no superintendence has been necessary beyond the marking of the ownership of the State by signs, and occasional inspection of the lands. Several old buildings have been sold and removed or torn down, and the cellar holes

filled up. Two wharf properties not required for immediate development have been let to the former owners at a substantial rent. Both claims are in suit, and the rent should more than compensate the Commonwealth for the interest running on these claims. In some places fencing has been required. In Watertown a small amount of filling material, secured from the town on favorable terms, was deposited where it was sure to be required in development. Settlement for the lands and buildings taken for the King's Beach Reservation was delayed by the complicated nature of the titles, which made it unwise to settle with claimants until the statutory period for bringing action had expired. This time having come, settlements have been made with all but two claimants, and the buildings are being removed.

During the year new rules for the government and use of the reservations and parkways have been made and copies posted where they could be seen by the public. Some good-humored criticism has been made as to some of these rules; but experience has shown that, for willing offenders, rules cannot be too exactly expressed, while for others regulations are seldom needed. The increased use of the park lands has somewhat increased the duties of the police employed by the Commission. Rules and regulations governing their conduct and explaining their duties have been adopted by the Board, and each police officer is required to familiarize himself therewith. Heretofore the police employed by the Commission have been selected by them after a personal examination of candidates. The Civil Service Commission, however, have notified the Board that by reason of chapter 121 of the Acts of 1897, defining the authority of the police of this Commission, the office has been placed within the classified service, and that future appointments will be made according to the rules governing the selection of employees in the Civil Service.

4. Finances.

I have prepared and present with this report the usual financial statement, giving in detail the expenditures from Dec. 1, 1896, to Dec. 1, 1897. It will be noted that, in conformity with the provisions of chapter 550 of the Acts of 1896, the cost of maintenance and operation is no longer

charged to a separate appropriation, but directly to the general loans.

The following tables show in brief form the expenditures under the various park loans for the year ending Dec. 1, 1897: —

METROPOLITAN PARKS LOAN.

Blue Hills Reservation: —		
Land,	$25,873 00	
Labor,	11,514 86	
* Miscellaneous,	8,296 01	
		$45,683 87
Middlesex Fells Reservation: —		
Land,	$117,755 72	
Labor,	14,550 06	
Miscellaneous,	22,431 48	
		154,737 26
Beaver Brook Reservation: —		
Land,	$1,093 46	
Labor,	1,425 88	
Miscellaneous,	1,433 27	
		3,952 61
Stony Brook Reservation: —		
Land,	$25,293 27	
Labor,	4,059 47	
Miscellaneous,	7,930 91	
		37,283 65
Revere Beach Reservation: —		
Land,	$518,694 88	
Labor,	1,378 69	
Miscellaneous,	261,818 49	
		781,892 06
West Roxbury Parkway: —		
Land,	$4,953 00	
Miscellaneous,	690 00	
		5,643 00
Hemlock Gorge Reservation: —		
Land,	$18,700 00	
Labor,	943 15	
Miscellaneous,	2,876 14	
		22,519 29
King's Beach Reservation: —		
Land,	$12,717 79	
Miscellaneous,	29 75	
		12,747 54
General expense,		15,893 58
		$1,080,352 86
Total paid for land during the year,	$725,081 12	
Total paid for labor,	33,872 11	
Total paid for miscellaneous,	321,399 63	
		$1,080,352 86

* For division of miscellaneous charges, see tables on pp. 91-100.

METROPOLITAN PARKS LOAN, SERIES II.

Blue Hills Parkway: —		
Land,	$81,114 26	
Labor,	178 15	
Miscellaneous,	9,926 72	
		$91,219 13
Middlesex Fells Parkway: —		
Land,	$99,780 53	
Labor,	882 03	
Miscellaneous,	136,292 48	
		236,955 04
Mystic Valley Parkway: —		
Land,	$28,977 92	
Labor,	240 30	
Miscellaneous,	73,305 22	
		102,523 44
Revere Beach Parkway: —		
Land,	$11,484 25	
Miscellaneous,	26,671 86	
		38,156 11
Middlesex Fells Boundary: —		
Labor,	$1,536 53	
Miscellaneous,	2,206 85	
		3,743 38
Stony Brook roads: —		
Labor,	$2,100 93	
Miscellaneous,	1,986 14	
		4,087 07
General expense,		11,620 92
		$488,305 09
Total paid for land during the year,	$221,356 96	
Total paid for labor,	4,937 94	
Total paid for miscellaneous,	262,010 19	
		$488,305 09

CHARLES RIVER LOAN.

Land,	$133,164 05	
Miscellaneous,	12,171 33	
		$145,335 38

In addition to these amounts the State Auditor has charged to the Metropolitan Parks Loan the balance of maintenance expense from July 1, 1896, to Jan. 1, 1897, amounting to $19,604.06; and sinking fund requirements of the same loan for 1897, $63,630.70; making the total amount charged to the Metropolitan Parks Loan during the year $1,163,587.62. He has also charged to the Metropolitan Parks Loan, Series II., sinking fund assessment for 1897, $14,057.10; making

the total amount charged during the year to Metropolitan Parks Loan, Series II., $502,362.19.

The following tables show the total amount expended in each loan and the cost of each reservation and parkway to date, and the amounts charged and reserved by the Auditor's Department to meet the sinking fund and interest requirements to Jan. 1, 1900: —

METROPOLITAN PARKS LOAN.

Blue Hills Reservation: —		
Land,	$341,045 79	
Labor,	104,275 89	
Miscellaneous,	56,117 47	
		$501,439 15
Middlesex Fells Reservation: —		
Land,	$635,814 78	
Labor,	82,601 12	
Miscellaneous,	64,852 14	
		783,268 04
Beaver Brook Reservation: —		
Land,	$29,819 29	
Labor,	6,867 77	
Miscellaneous,	7,687 29	
		44,374 35
Stony Brook Reservation: —		
Land,	$194,951 60	
Labor,	21,376 61	
Miscellaneous,	22,986 83	
		239,315 04
Revere Beach Reservation: —		
Land,	$806,142 05	
Labor,	1,875 03	
Miscellaneous,	282,455 42	
		1,090,472 50
West Roxbury Parkway: —		
Land,	$244,476 01	
Miscellaneous,	8,308 67	
		252,784 68
Hemlock Gorge Reservation: —		
Land,	$46,600 00	
Labor,	2,737 75	
Miscellaneous,	7,446 72	
		56,784 47
King's Beach Reservation: —		
Land,	$12,717 79	
Miscellaneous,	29 75	
		12,747 54
General expense,		62,392 11
		$3,043,577 88

Total paid for land, ...	$2,311,567 31	
Total paid for labor, ...	219,734 17	
Total paid for miscellaneous, . .	512,276 40	
		$3,043,577 88
Sinking fund requirements to 1896, .	$18,980 18	
Care and maintenance to July 1, 1896, .	85,813 46	
Care and maintenance from July 1, 1896, to Jan. 1, 1897, ...	19,604 06	
Sinking fund assessment for 1897, .	63,630 70	
		188,028 40
Total charged to Dec. 1, 1897, ...		$3,231,606 28

METROPOLITAN PARKS LOAN, SERIES II.

Blue Hills Parkway: —		
Land, ...	$81,114 26	
Labor, ...	367 98	
Miscellaneous, ...	16,083 06	
		$97,565 30
Middlesex Fells Parkway: —		
Land, ...	$142,199 33	
Labor, ...	924 78	
Miscellaneous, ...	231,898 45	
		375,022 56
Mystic Valley Parkway: —		
Land, ...	$101,678 81	
Labor, ...	458 70	
Miscellaneous, ...	127,603 46	
		229,740 97
Revere Beach Parkway: —		
Land, ...	$11,484 25	
Miscellaneous, ...	28,116 69	
		39,600 94
Middlesex Fells Boundary: —		
Labor, ...	$11,356 44	
Miscellaneous, ...	5,976 08	
		17,332 52
Stony Brook roads: —		
Labor, ...	$2,100 93	
Miscellaneous, ...	1,986 14	
		4,087 07
Blue Hills Boundary: —		
Labor, ...	$5,242 90	
Miscellaneous, ...	471 51	
		5,714 41
Middlesex Fells and Lynn Woods: —		
Miscellaneous, ...	$4,423 75	
		4,423 75
General expense, ...		22,587 51
		$796,075 03

Total paid for land, ...	$336,476 65	
Total paid for labor, ...	20,451 73	
Total paid for miscellaneous, . .	439,146 65	
		$796,075 03
Sinking fund requirements to 1896, .	$3,650 03	
Sinking fund assessment for 1897, .	14,057 10	
		17,707 13
Total charged to Dec. 1, 1897, ...		$813,782 16

CHARLES RIVER LOAN.

Land, ...	$271,539 05	
Miscellaneous, ...	24,305 09	
Total charged to Dec. 1, 1897, ...		$295,844 14

The appropriations heretofore made have been as follows: —

METROPOLITAN PARKS LOAN.

Original appropriation (chapter 407, Acts of 1893), ...	$1,000,000 00	
First Revere Beach Act (chapter 483, Acts of 1894), ...	500,000 00	
Second Revere Beach Act (chapter 305, Acts of 1895), ...	500,000 00	
General appropriation (chapter 466, Acts of 1896), ...	1,000,000 00	
General appropriation (chapter 464, Acts of 1897), ...	500,000 00	
	$3,500 000 00	
To provide for interest and sinking fund requirements to 1900 (chapter 311, Acts of 1897), ...	900,000 00	
Total amount of loans, ...		$4,400,000 00
To this should be added amounts received for sales of buildings, receipts from bath-house, fines, etc., .		12,987 08
Making the total		$4,412,987 08
Deducting from this amount the total of the amounts already charged to the loans, ...	$3,231,606 28	
And the amounts reserved by the Auditor, ...	296,574 40	
		3,528,180 68
It appears that there remains in the hands of the State Treasurer the unexpended balance of . . .		$884,806 40

METROPOLITAN PARKS LOAN, SERIES II.

Original Boulevard Act (chapter 288, Acts of 1894), ...	$500,000 00	
General appropriation (chapter 472, Acts of 1896), ...	500,000 00	
General appropriation (chapter 521, Acts of 1897), ...	1,000,000 00	
	$2,000,000 00	
To provide for interest and sinking fund requirements to 1900 (chapter 311, Acts of 1897), ...	100,000 00	
Total amount of loans, ...		$2,100,000 00
Receipts for sales, etc, ...		3,947 00
Making the total, ...		$2,103,947 00
Deducting amounts already charged to the loans, ...	$813,782 16	
And amounts reserved by the Auditor,	52,171 30	865,953 46
Balance remaining in the hands of the State Treasurer,		$1,237,993 54

CHARLES RIVER LOAN.

Chapter 509, Acts of 1894, ...	$300,000 00
Receipts from sales, rents, etc., ...	2,906 61
Making the total, ...	$302,906 61
Amounts already charged to loan, ...	295,844 14
Balance remaining in the hands of the State Treasurer,	$7,062 47

It is estimated that the entire balance of the Metropolitan Parks Loan is required to meet unsettled claims for lands taken, balance on contracts, cost of maintenance until Jan. 1, 1900, and payment for the proposed takings on Charles River. There remains, however, a balance of about $1,000,000 in the Metropolitan Parks Loan, Series II., not required for meeting existing liabilities.

Respectfully submitted,

JOHN WOODBURY,

Secretary.

LANDSCAPE ARCHITECTS' REPORT.

To W. B. de las Casas, Esq.,
Chairman of the Metropolitan Park Commission, Boston, Mass.

Sir: — The undersigned respectfully submit the following report for the year ending Dec. 1, 1897.

Since the last annual report of your Landscape Architects the death of Charles Eliot has removed from the firm the member whose time and thought and great ability were especially devoted to the development of the Metroplitan Park System. It was he who, more than any other man, gave form and direction to the movement for large reservations of scenery in the vicinity of Boston that came to a head in the appointment of the preliminary Metropolitan Park Commission of 1893. It was his comprehensive, well-studied report to that Commission which described the motives and policies that should govern the formation of a Metropolitan Park System, and which outlined the physical features of such a system. In adopting the recommendations of this preliminary commission, the Legislature, in effect, approved the project set forth in Mr. Eliot's report, and made that report the basis of the great undertaking confided to your Board. Mr. Eliot brought to this work, with his professional training, not only a keen sense of the beautiful and an analytical mind which enabled him to distinguish the effective from the ineffective elements, whether in a landscape or in a course of action, but a lifelong intimacy with the scenery and conditions of the Metropolitan District such as few others could have brought to the task. Soon after making his report to the preliminary commission Mr. Eliot entered, as a partner, this office, in which he had previously studied as a pupil, and the firm of Olmsted, Olmsted & Eliot became Landscape Architects to your Commission. Although we were in constant consultation with him as to

Metropolitan work, Mr. Eliot always represented the firm in personal dealings with the Commission, and devoted more time to Metropolitan affairs than the other members of the firm, so that his loss has been more deeply felt in the work of your Board than in any other professional work with which he was engaged.

In the arrangement of our report we have followed the divisions adopted in previous years.

I. Concerning Acquired Reservations.

A. Rock-hill or Forest Reservations.

No changes of great importance in the boundaries of the Blue Hills, Stony Brook and Middlesex Fells Reservations have been made during the year, but the Commission has called upon us from time to time for advice with regard to minor works of construction or maintenance within the forest reservations.

In the Blue Hills some work has been done in the way of improving and constructing inexpensive wood roads for the purpose of giving ready access to the remoter parts of the reservation in case of fire. These roads were needed, not for the purpose of pleasure drives, or to make the scenery of the reservations more accessible to the public, but to make it possible, at the least cost, for the Superintendent and his men to get from point to point. We have advised the Superintendent in regard to this work, and have borne in mind the attractiveness of the roads when that did not conflict with economy of construction. But, according to the instructions of the Commission, we have made no effort to locate these roads in such a way as to connect with others that may be needed in the future, or so as to provide convenient routes for the public among the beauties of the reservation. The roads are confessedly temporary, cheap, and for administrative purposes. This is a reasonable policy in the present stage of the Metropolitan Park System, but it is to be apprehended that the public will lose sight of the purposes of such roads, and will from time to time demand local improvements in their grades and surfaces, which will gradually lead to the formation of a series of well-built, and, in the

long run, costly pleasure drives, occupying positions determined by considerations quite different from those of landscape enjoyment. This can be guarded against only by planning in advance a complete system of pleasure ways, and then constructing cheap wood roads for administrative purposes from time to time on such of the lines as it seems most necessary to open. Thus the present purposes would be served equally well, and incidentally the public would get more pleasure from the reservations, while the formation of habits or fashions of using routes undesirable as permanencies would be avoided.

With a view to preventing the obliteration of interesting and beautiful features in the scenery of the reservation by "weed-growths," whether of the tree sort or smaller, and with a view to enhancing the characteristic beauties of the reservation by disencumbering them of unlovely or inharmonious features, the Commission has instructed us to guide the Superintendent of the Blue Hills Reservation in a certain amount of thinning and other work directed toward those ends. We chose for this work localities much resorted to by the public, where the improvement would be most obvious, rather than more remote places, where the natural conditions call perhaps more urgently for attention. We have marked a considerable number of trees for felling, and we have prepared a record of our motives in the form of an annotated plan upon a print of the topographical survey at the scale of one hundred feet to the inch, so that when it becomes necessary in the future to make further improvements in the same region our successors will be enabled to work intelligently toward the same ideals that have guided us.

In the Fells, acting under the instructions of the commission, we have given detailed study to the existing growth and scenery along the South Boundary Road and some of the town roads, so as to prepare ourselves to direct similar operations in those localities; but, except for a small amount of thinning at one point, we have as yet gone no further than planning in the forestry work on this reservation. Early in the year we prepared plans for improving the grade and line of the road through Jerry Jingle Notch, which have been executed in part.

Two requests for permission to erect buildings in the Middlesex Fells for public or quasi-public purposes have been made to the Commission during the year. As we pointed out at the time, the most serious objection to granting these requests was that of establishing a precedent for erecting on the Metropolitan Reservations buildings having no direct relation to the purpose for which the lands were taken. Whatever reasons are urged in one case or another for the erection of public buildings on park land, the underlying, actuating motive is almost always a desire to save the expense of purchasing a site for the buildings in question. This tendency on the part of the men who ought to know better to regard parks as so much unoccupied public building land, — as the vacant lots of the community, — must constantly be combated; for, as land in the Metropolitan District rises in value, a steadily increasing pressure will be brought to bear on the Commission to permit the erection of buildings for all sorts of public or quasi-public purposes. In New York the line was crossed in the case of the Metropolitan Art Museum, and the struggle has been a constantly recurring and desperate one to prevent museums, exhibition buildings, armories and the like from encroaching on Central Park. The object for which building sites are generally asked in public parks are so laudable in themselves that resistance is always difficult, and the only sound, strong ground to take is rigidly to exclude all that do not distinctly make toward the objects for which the lands are taken. The prime object of any large park or reservation of scenery is to provide a place not only beautiful in itself, but refreshing by contrast with the city, the place of buildings, so that the presumption is against the introduction of any building into such a reservation. A building can never be neutral in a landscape, it must help it or mar it; and the only justification for injuring the landscape of a park is to provide necessary means for its convenient use by the public.

A driveway through Stony Brook Reservation is under construction, in accordance with plans prepared in this office last year. This driveway will connect with that through the West Roxbury Parkway, contemplated by the Boston Park Commission but not yet undertaken, and will lead from

MYSTIC VALLEY PARKWAY.

the West Roxbury Parkway, at Washington Street to Glenwood Avenue, Hyde Park. One link in the continuation of this line to the Blue Hills has already been secured, as referred to in the next section of our report.

B. The Lake, Brook and River Reservations.

The shores of the Neponset River between Hyde Park and Paul's Bridge have been, to a considerable extent, secured by the Commission, not only with a view to preserving them in accordance with the general policy proposed by Mr. Eliot to the preliminary Metropolitan Park Commission, but primarily to secure an agreeable route in extension of the West Roxbury Parkway and Stony Brook Reservation toward the Blue Hills. While we have prepared a number of alternative schemes for passing through or around the built-up portion of Hyde Park intervening between the Stony Brook Reservation and the Neponset River, the Commission has deemed it best to leave the matter of this connection in abeyance for the present.

The opening to the public of the Mystic Valley Parkway, and its great popularity, as shown by the number of bicycles and carriages using it, have drawn attention again to its illogical beginning and end, and to the inconvenience caused by the present condition of the Bacon Street link of the drive. The fact that, notwithstanding these present drawbacks, the Parkway should immediately become so popular, is very encouraging, and should stimulate the Commission to secure lands for its connection with the Fells at the north and with the Cambridge Park System on the south. Some control also of the western banks of the Mystic Ponds is greatly to be desired ; and, as nothing more is wanted than the permanent preservation of their verdurous character in the view from the opposite shore, this would seem a reasonable case for the application of the "restriction" policy, referred to below. The opening of an electric car line on the street next west of the ponds will inevitably hasten the erection of houses between it and the shore, to the great detriment of the reservation, unless some action is promptly taken toward preserving a screen of trees.

The Charles River Reservation has occupied a great deal of thought and attention during the past year. Following up the lines laid down in the report of the Joint Board on the Improvement of the Charles River, we have, in consultation with the committee on that Reservation, prepared plans, in accordance with which the Commission has made, or is about to make, takings along the banks of the Charles River between Watertown and Hemlock Gorge. The general motive in determining the location of the taking line has been to preserve the scenery of the river by securing control of the foliage-screen along its banks. Where there are broad meadows beside the stream, and the foliage-screen lies at a distance from the river, the value of the land has often prevented such a wide taking. In such cases, when buildings begin to intrude upon the view, it will be necessary to hide them out by river-bank trees planted within the narrow taking limit, and to forego the broader beauty of the meadows. Again, at the points where manufacturing establishments crowd upon the river, cost has, in some cases, debarred any taking, while in others narrow strips have been secured, upon which may be grown screening plantations of trees and bushes. In general, the takings have been made in such a form and in such relation to the topography that it will be possible, upon one bank or the other, to construct a driveway and a river-side foot-path when they shall be needed. Here and there the high cost of the land or of obstructing buildings has caused the Commission to disregard this feature of the plan, leaving the solution of such difficult points to the time when the need of a roadway may be actually felt.

At points where no roadway is contemplated for the future, and where it is not desired to provide landing-places or picnicking grounds for the public, the sole object of any taking is to preserve the scenery. In case of occupancy for residential purposes, such preservation of the water-front scenery need not interfere in the least with the fullest private use and enjoyment of the land; and in such cases it is to be hoped that the public spirit of the owners will lead them to submit their land to certain "restrictions" without demanding payment proportioned to the value of the land

restricted. Such restrictions would be in the nature of the "building-limit" restrictions along many streets and parkways, and would necessarily vary in terms, according to the circumstances of each case. In general, they would provide against the erection of buildings within the restricted strip, against the accumulation of ashes or rubbish, and against other nuisances, whether offensive to the ear or nose or eye. They would also provide against the destruction of any trees or bushes without the consent of the Commission. In most cases, certainly, the reciprocal benefit to the landowners of having their neighbors' water-front permanently free from any nuisance would more than compensate for losing the privilege of making their own river-front into a disorderly backyard.

The accompanying plan, in two sections, shows the outlines of the takings along the river, no distinction being made between lands of which the fee is to be held and lands which are to be simply restricted. The possible location for a future river-bank driveway is indicated in a diagrammatic way, except where land has not been taken with a view to securing a place for it.

On the lower portion of the river the control of the south bank has been made more complete by a taking from Harvard University at Soldiers' Field and Longfellow Meadow in accordance with the plan for a one-mile speeding course on the marshes at this point, which is reproduced herewith. As pointed out in the Landscape Architects' report to the Joint Board on the Improvement of Charles River, in 1894, the stretch along the river between Western Avenue and North Harvard Street is the only point reasonably near the centre of population where an unbroken stretch of one mile without interruption by cross streets can be maintained without unjustifiable interference with traffic. Here, in addition to the natural obstacle of the river, are two large cemeteries, which may be regarded as permanent barriers to any further cross streets. If there is to be any provision for speeding horses in connection with the public park system, this is the place to have it, and the strength of the desire for such a provision was made evident before the Legislature last year. The Commission, therefore, directed us to prepare a plan for

such a speedway, adjusting it so far as possible to the desire of Harvard University to retain the greater part of Longfellow Meadow for college purposes. In the accompanying plan provision is made for a boundary road and sidewalk, upon which buildings erected upon adjacent private land will front. Opposite the lands of Harvard University, where buildings fronting upon the road are not to be expected, space is provided for an additional row of trees upon the outer (southern) side of the sidewalk, and the grade of the road is reduced from seventeen, necessary to provide for the proper drainage of the buildings, to thirteen, so as to save the cost of filling. Where it parallels the speedway this road is sixty feet wide, so as to provide space for the return of the speeders from the finish to the start, since speeding is permissible in one direction only. The speedway, separated from the driveway by a row of trees, is fifty feet wide, and, instead of being crowned, slopes slightly from one side to the other, so as to counteract the effect of the long, easy curve. A concourse is provided at the finish of the mile, and a long "run over," on which to slow the horses before turning into the driveway. Space is provided next the horse speedway for a bicycle track twenty feet wide. This provides a mile on a long, easy curve, practically a "straight away;" but, instead of then swinging into the return drive, as does the horse speedway, it returns upon itself, so as to form a continuous two and a quarter mile track; the "corners" are similar to those of a one-third mile track. Access to the space within the track is gained by subways, so as to avoid interference with those using the track, and the start is placed on a siding for the same reason. Along the river's edge is a broad promenade. In the future, as the population builds up in this region, it will be desirable to provide access to the river-bank promenade at some point between the beginning and end of the speedway by a subway, as indicated on the plan. All of the above ways, except part of the boundary road, as explained above, will be constructed at a grade just above the marsh level, protected from the high tides by a temporary dyke along the line of the promenade until such time as a dam shall be constructed lower down the river, to prevent the backing up of water at high tide and the exposure of flats at low.

METROPOLITAN PARK COMMISSION

GENERAL PLAN FOR

CHARLES RIVER SPEEDWAY

FOR HORSES AND BICYCLES

SCALES

100 50 0 0 500 1000 FEET

10 0 100 200 300 METRES

F. L. & J. C. OLMSTED LANDSCAPE ARCHITECTS.
BROOKLINE, MASS. DEC 1ST 1897.

CROSS SECTION ON LINE A-B.

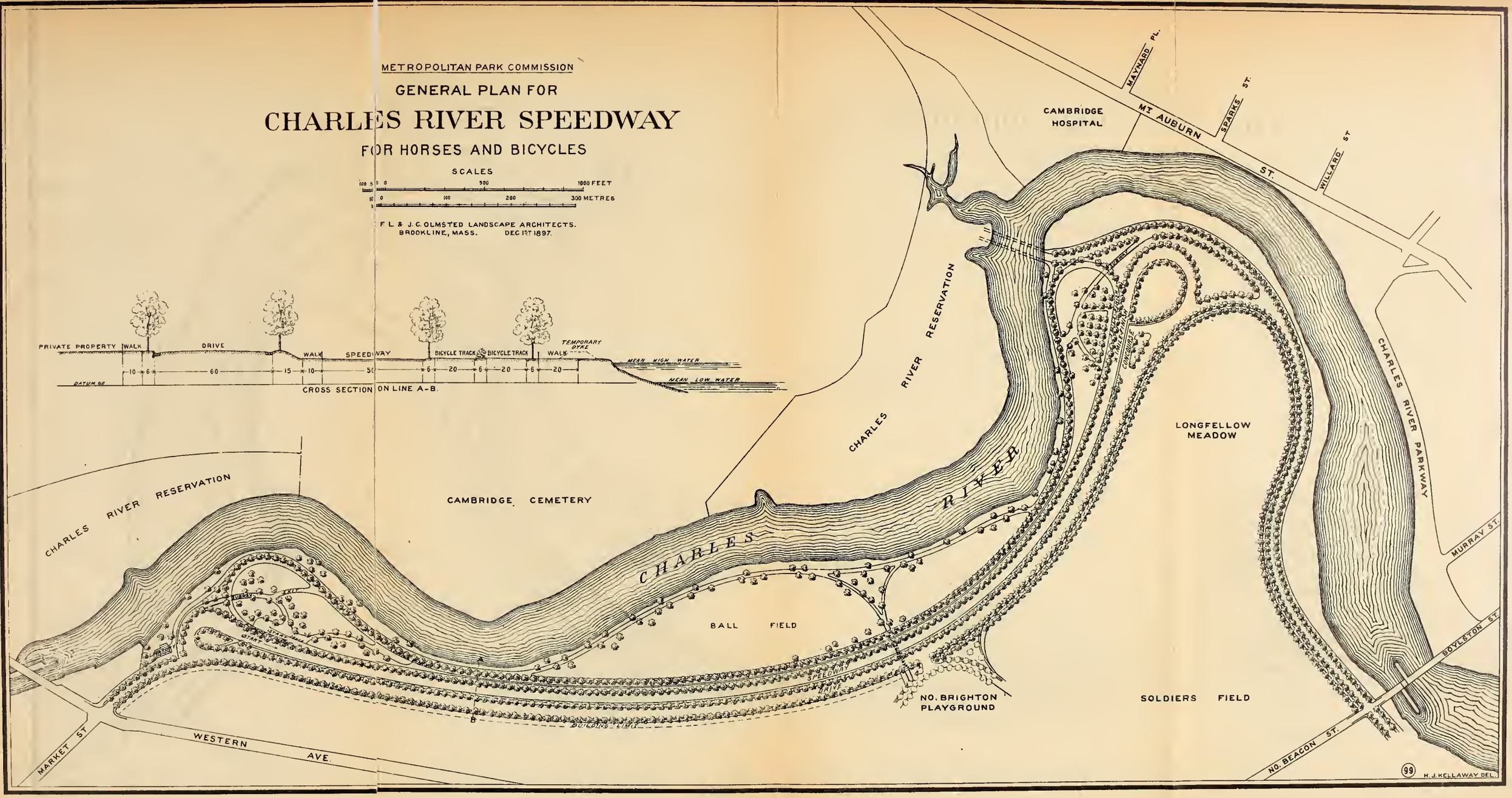


PHOTO-LITH. & PRINTED, FORBES CO. BOSTON.

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C. The Bay and Seashore Reservations.

Of the two reservations of this class already acquired, King's Beach has called for no attention from us during the year; but at Revere Beach by far the most extensive and elaborate work of development that has been entered into by the Commission has gone on during the year, in accordance with plans prepared in this office.

The future need for a traffic road near the shore between Lynn and East Boston and the intimate connection between such a traffic road, and plans for the development of Revere Beach, were pointed out in the report of the Landscape Architects a year ago. It was expected that the town of Revere or the county of Essex would take the land needed to provide for such a highway; but during the year the Commonwealth, as represented in the Highway Commission, has taken upon itself this burden. The conditions are such that there is very little choice as to the route, which south of Revere Street must occupy Ocean Avenue and its proposed southerly extension, and north of Revere Street must adjoin the landward side of the Reservation. The present boundary of the reservation north of Revere Street, following the curve of the beach in an irregular manner along the previously existing property lines, it has always been the intention to restore to the long, sweeping curve, which is an expression of the whole character of the beach. In order to secure this curve, it will be necessary to abandon a strip of varying width along nearly the whole northern part of the beach, and this strip may fairly be regarded as a beginning of the taking which the Commonwealth will have to make in order to provide the traffic road. The details of the proposed highway, both as to its width and as to the means for passing certain difficult points, as at Revere Street and at its point of crossing the Revere Beach Parkway near the southern circle, have been under consideration, but no plans have been adopted as entirely satisfactory either to the Highway Commission or to your Board. The necessity of some provision for street traffic and electric cars along the line described is so clear that it is to be hoped some definite plan may be decided upon as soon as possible, and the necessary action taken,

since the land in this vicinity is steadily and rapidly increasing in value.

The motives determining the plan for the improvement of the beach and the arrangements for its use by bathers were so fully discussed in the last report of the Landscape Architects, and the character of the arrangements as executed are so fully set forth in the Secretary's report, that we need make no further reference to them here, in spite of their great importance.

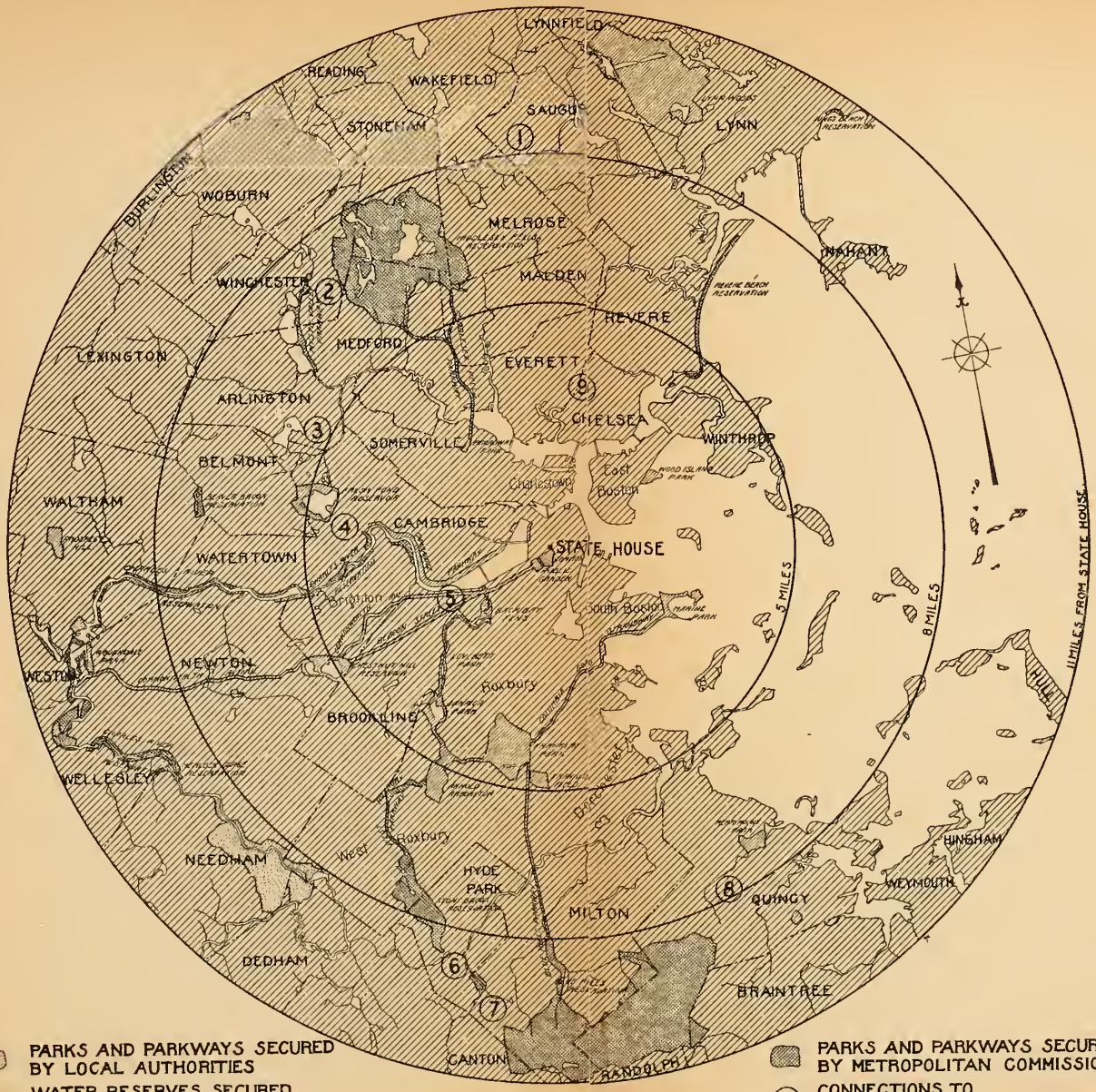
II. Concerning Desirable Acquisitions.

In the last annual report of the Landscape Architects attention was called to the remarkably equitable and logical distribution of the Metropolitan Reservations secured by adherence to a well-studied, comprehensive, preconceived plan; namely, that set forth in Mr. Eliot's report to the preliminary commission.* The steadiness with which your Commission has pursued the aims which it set before itself in the adoption of that report, and the consequent avoidance of waste of energy and funds through the acquisition of unrelated fragments, are in admirable contrast with the extravagance and illogical development resulting from the planless, hand-to-mouth procedure not infrequently pursued by park commissions. The Metropolitan District has realized the importance of the work more readily and authorized its advancement more rapidly than many people expected at the time Mr. Eliot's report was submitted; but, even if for financial reasons it should be decided to provide the Commission with no further funds for the acquirement of lands, the completion of the whole scheme should still be kept clearly in mind for the future. The accompanying diagrams show clearly at once the progress of development and the several reservations acquired up to the present time. In 1893, when your Board was created, the extent and arrangement of the parks † and parkways held by local boards were as shown on the first diagram, while the present condition is shown on the second. A study of Mr. Eliot's report, reprinted

* See Appendix.

† On account of their character and treatment, the Chestnut Hill Reservoir and Fresh Pond Reservations are here classed as parks.

DIAGRAM OF THE PARKS & PARKWAYS OF THE BOSTON METROPOLITAN DISTRICT IN 1897



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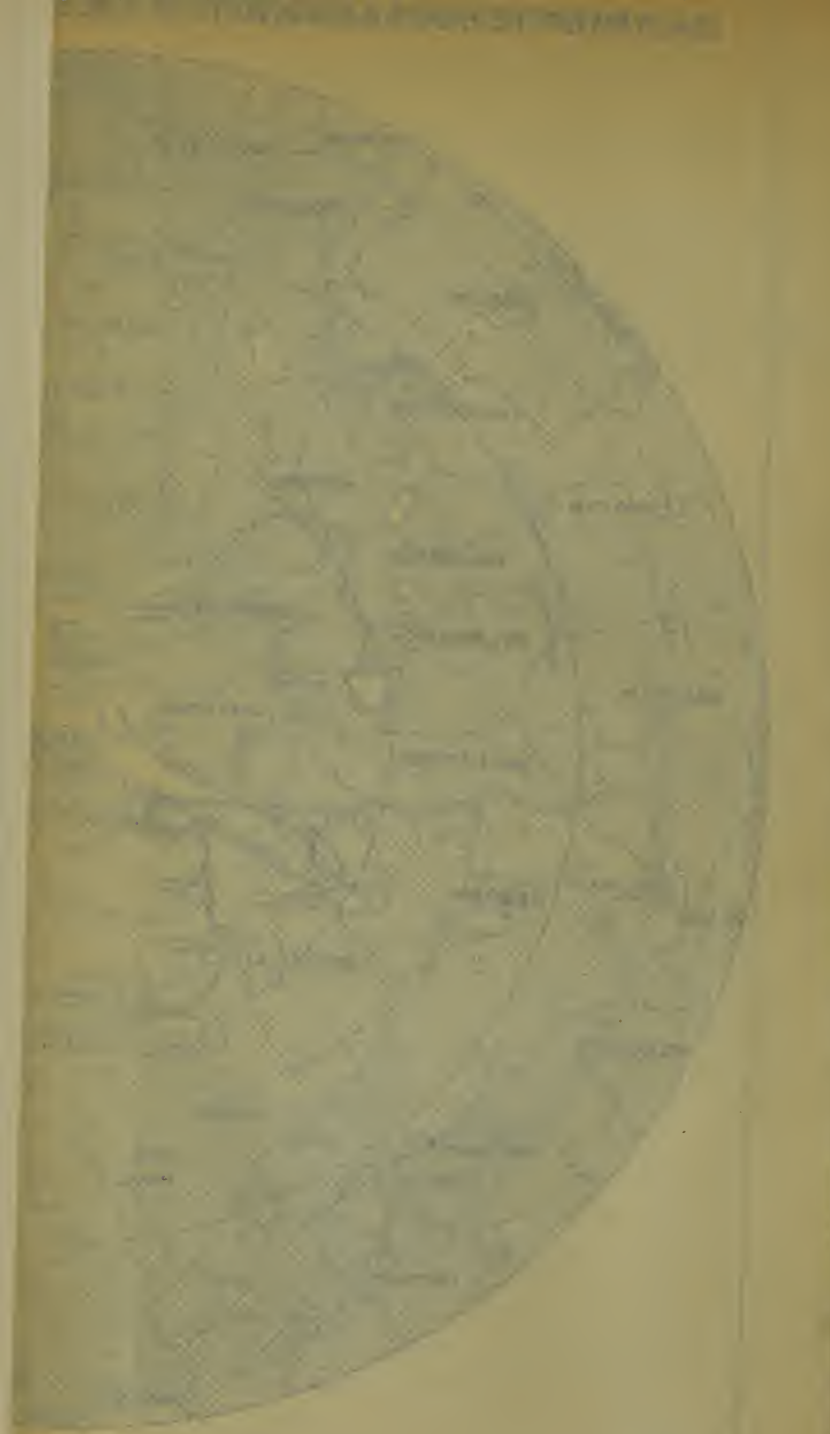


in the Appendix, will make clear that the lands he recommended to be withdrawn from occupation were chosen not only because they would provide reservations of interesting and beautiful scenery as the surrounding lands become covered with houses, but because they were peculiarly unfitted for occupation, — the rock-hill reservations because of their excessively rugged topography, and the river-bank and marsh reservations because under occupation they would become menaces to the health of the community. Every reason that influenced Mr. Eliot in determining that outline of what was desirable to be reserved applies with equal or added force to-day; and, whatever time is set for the completion of the system, its logical completeness ought not to be sacrificed.

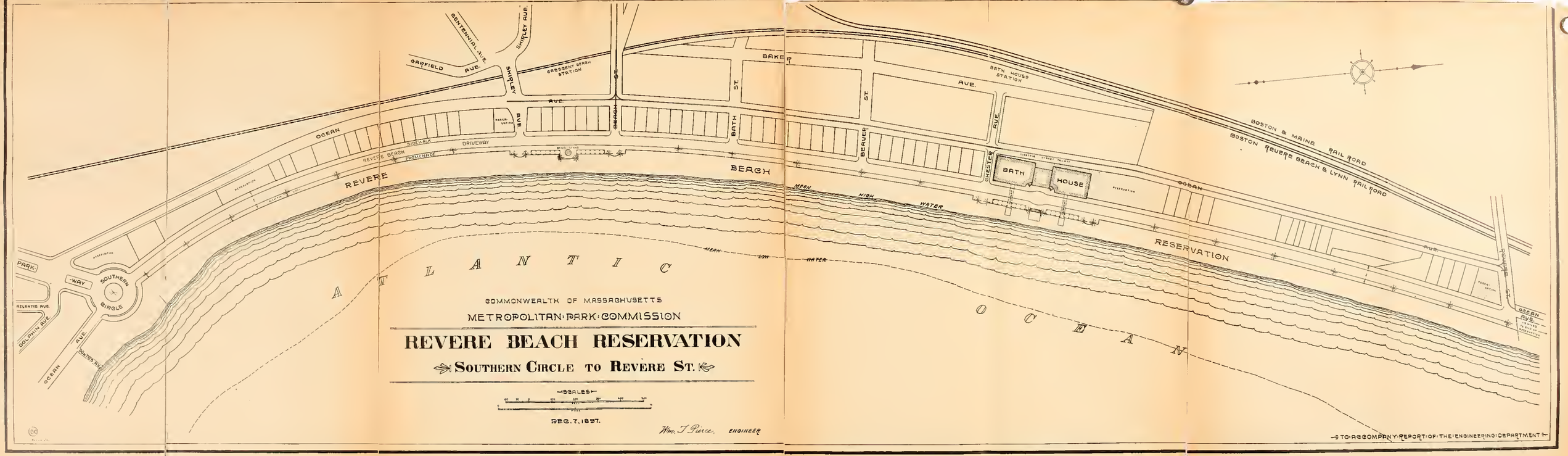
It was suggested last year that, of the acquisitions remaining to be made, the most important were, first, the rounding out of the Lynn Woods to suitable boundary lines; second, the preservation of the boating course of the Charles River; and third, an increase of the sea-shore holdings of the Commission. Of these suggestions, the second has been carried out as described above, while the apparent indifference of the city of Lynn has been sufficient to check any action on the part of the district as a whole toward extending and rectifying the boundaries of the Lynn Woods. So much local interest and public spirit, however, has been shown in connection with the project of securing shore lands to the south of Boston, that it may fairly be hoped that a substantial reservation will be acquired along the shores of Quincy Bay and the Neponset Marshes. As pointed out a year ago, such a reservation will provide for the southern half of the district what the northern half has in Revere Beach, and, like Revere Beach, it will withdraw from use no commercially valuable frontage; for, just as Revere Beach is unavailable to commerce because of its exposure, so this shore is unavailable because of the shallowness of the waters. A glance at the map will show the position that a Quincy Bay holding would have in the balance of the system.

In addition to the reservations which have been considered above, there remain only the banks of the Mystic and Neponset rivers to bring to completion the whole system of

reservations which your Commission set before itself as its aim when it entered upon its duties in 1893. Not only are these river banks extremely beautiful and interesting in their present condition, but the rivers are already being so seriously polluted by an indiscriminate occupation of their banks at certain points as to make them a growing nuisance. With regard to one portion of the Neponset River, the State Board of Health has made a very comprehensive report, urging in the strongest terms the necessity for action by the Commonwealth; and, although the peculiar condition of the Fowl Meadows does not recur at any other point, different problems of a no less difficult nature are likely to arise in the near future if the streams are not protected by a reservation of as much of their banks as is still to be secured at reasonable cost. A glance at the second of the circular diagrams will show how large a portion of the banks of the Charles River between Hemlock Gorge and Mother Brook is already in public ownership in the form of water reservations. Since your Commission has already provided for the proper protection of the banks of the river below Hemlock Gorge, and it is proposed in connection with the control of the shores of the Neponset River to acquire those of its main tributary, Mother Brook, it is obvious that very small additional takings, in a region where land is low in value, would practically complete the public ownership of the loop of rivers that serve, with the harbor, to make an island of so large a part of the Metropolitan District.

III. Concerning Metropolitan Parkways.

Under the appropriation for parkways, the Commission wisely decided to open parkways only upon lines which would serve as approaches to the reservations from regions of dense population, instead of expending the money in the construction of fragmentary parkways placed here and there according to the urgency of local demand without regard to the reservations, which are the main object for which the Commission was created. In accordance with this view lands were acquired last year for two routes, — the Blue Hills and Middlesex Fells Parkways, — Mystic Valley Park-


COMMONWEALTH OF MASSACHUSETTS
METROPOLITAN PARK COMMISSION
REVERE BEACH RESERVATION
SOUTHERN CIRCLE TO REVERE ST.
SCALES
DEC. 7, 1897.
Wm. T. Pierce, ENGINEER
TO ACCOMPANY REPORT OF THE ENGINEERING DEPARTMENT
ATLANTIC OCEAN
REVERE BEACH
OCEAN
REVERE BEACH PROMENADE
SIDEWALK
DRIVEWAY
GARFIELD AVE.
CENTENNIAL AVE.
SHIRLEY AVE.
CRESCENT BEACH STATION
BAKER ST.
BEACH ST.
BATH AVE.
BEACHER ST.
CHESTER AVE.
BATH HOUSE STATION
BATH HOUSE
BOSTON & MAINE RAIL ROAD
BOSTON REVERE BEACH & LYNN RAIL ROAD
MEAN HIGH WATER
MEAN LOW WATER
RESERVATION
SOUTHERN CIRCLE
PARK WAY
ATLANTIC AVE.
DOLPHIN AVE.
OCEAN AVE.
SANTOS AVE.
REVERE ST.
OCEAN AVE.

way being classed here, on account of its character, as a reservation. During the year the construction of a considerable portion of the Middlesex Fells Parkway has been brought to completion, except for the planting of the necessary shade trees, and the remaining portion is well under way. On the Blue Hills Parkway the northern section, from the Neponset River at Mattapan to Brook Road, is now under construction. The road formerly existing here was much used for traffic, so that the completion of this portion of the parkway, providing separate routes for pleasure travel and for teaming, is more urgently called for than that of the long interval between Brook Road and the reservation, which in its present condition serves as a fairly adequate approach to the reservation for those who now have occasion to use it.

The two direct routes to the larger reservations of the Metropolitan Park System being thus already provided, it would be well to consider specifically what other routes for parkways would reasonably be parts of the system. Referring again to the second of the circular diagrams accompanying this report, beginning at the northerly side of the district, it will be seen that a connection between the Lynn Woods and the Middlesex Fells in the region marked by the figure 1 would be desirable. At present one can pass from one of these reservations to the other through an agreeable country, and, for the most part, over tolerably smooth and pleasant roads; but in course of time, when these roads become more closely occupied by buildings and have to provide for a larger tide of travel than at present, they will be inadequate. The rate of suburban development in this region, however, is by no means so rapid as at many other points in the district, and some delay in securing a permanently satisfactory line of communication at this point will not be disastrous.

As already noted, the Mystic Valley Parkway is at present isolated. If a connection were provided between some point on its northerly portion and the Middlesex Fells, in the region indicated by the figure 2, and a further connection were established between its southern end and the Fresh Pond Park in Cambridge, a route would be provided between the Middlesex Fells, and the population to the south, more

indirect than the Middlesex Fells Parkway, to be sure, but more interesting and park-like in character. For the connection between the Mystic Valley Parkway and Fresh Pond, alternative routes suggest themselves, one by way of Alewife Brook and one by way of Spy Pond, Arlington. To each of these some preliminary study has been given.

Fresh Pond, it may be well to say in passing, originally one of the most beautiful of the many ponds surrounding Boston, and most unfortunately marred at the time of its conversion into a reservoir, is now being formed, under carefully prepared plans, into an exceedingly interesting park. The city of Cambridge is spending large sums in the grading necessary to restore the slopes surrounding the pond to an agreeable form, at the same time providing the drives and paths needed to make the landscape accessible to large numbers of people. At present Fresh Pond is isolated and rather inaccessible even to the people of Cambridge. A connection at the point marked 4 leading to the Charles River Reservation will at once make Fresh Pond accessible not only to the people of Cambridge but to the whole Metropolitan District to the south; for it will put it into communication with the Charles River Parkway of the Cambridge Park Commission, and through that with the whole Boston Park system, reaching out southward through the West Roxbury Parkway and the Stony Brook Reservation to the Blue Hills. With the connections already described to the north, this will mean the linking together of the whole system of reservations. In the line to the south there are as yet some breaks of small size, but of much importance. At the point marked 5 there is most urgent need for proper connection between the Boston Parkway and the Cambridge System on the other side of the river by the widening of St. Mary Street and Ashby Street in such a way as to extend Audubon Road of the Boston Park System to the Charles River, and the throwing of a bridge across the Charles at this point to replace the old and inconvenient Cottage Farms Bridge. As this connection was described at some length in the last annual report of the Landscape Architects, we need not repeat the details of this connection. Further to the south there still remain two breaks (marked by the figures 6 and 7) in the

connection with the Blue Hills, as discussed in the first part of this report. Studies for completing this connection have been made and considered by the Commission, and, although there are several annoying difficulties in dealing with the problem, they are not such as stand in the way of its prompt solution.

Assuming that a reservation of the shores of Quincy Bay is to come into the hands of the Commission, it would be not unreasonable that it should be connected with the Blue Hills at the point indicated by the figure 8, but this is hardly of such vital consequence as the other connections we have considered. If the shores of the Neponset River are to be largely controlled by the Commission, so that an agreeable route may be provided along or near its banks from the Stony Brook Reservation to its mouth, a more direct approach to Quincy Bay would thus be provided. It is to be considered, however, that a parkway at the point marked 8 would provide not only for the connection between the Blue Hills and Quincy Bay reservations, but would serve also as an agreeable means of access to the Blue Hills from Quincy and the neighboring towns. Upon the very important connection which is needed to put Revere Beach into direct communication with the rest of the system and give it an agreeable means of access for those who ride the bicycle or drive, a beginning has already been made. It is shown on the diagram by the "fish-hook" at the southern end of Revere Beach. For the major part of the distance intervening between this point and the Middlesex Fells Parkway (the region is indicated by the figure 9) plans have been prepared for a tree-shaded drive, bordered at some points by stretches of salt marsh along the tidal creeks. These plans, not yet definitely adopted, provide for an electric car reservation, and for a large part of the distance reduce the parkway to the straitened limits adopted for the main stems of the Blue Hills and Middlesex Fells Parkways.

We have outlined above a system of connecting parkways, which has a consistent purpose. On the north the Fellsway leads directly from the crowded region of Somerville to the Fells, and by the northern link of the system to the Lynn Woods. On the south, Blue Hill Avenue and the Blue Hills

Parkway, almost the same in character as the Fellsway, lead with similar directness from Roxbury to the Blue Hills. On the north, the longer but far more interesting route by way of the Cambridge Parkway, Fresh Pond and the Mystic Lakes would lead from the very heart of the district to the Fells; while on the south the corresponding route to the Blue Hills would lie through the Boston Parkway, the West Roxbury Parkway and Stony Brook Reservation. Revere Beach, more important and far more popular than the proposed Quincy Bay Reservation is likely to be, would be more directly connected with the centre of population by its parkway than would the latter by the Neponset River route. The connection between Quincy Bay and the Blue Hills, less important than any other of the connections, may be compared, especially from the point of view of serving as an approach for Quincy people to the Hills, to a suggested parkway connecting King's Beach with the Lynn Woods, and serving as an approach for Lynn people to the woods. It may be well to proceed rapidly with the aquisition of these connecting links, or it may be well to proceed very slowly; in any event, such expenditures as are made ought to be applied, not upon any independent project, however attractive and admirable in itself, but toward filling these gaps in the very framework of the system.

Respectfully submitted,

F. L. AND J. C. OLMSTED,
Landscape Architects.

BROOKLINE, MASS., Dec. 1, 1897.

ENGINEER'S REPORT.

Boston, Nov. 24, 1897.

To W. B. de las Casas, Esq.,
Chairman Metropolitan Park Commission.

Sir: — I herewith submit the following report of the Engineering Department for the year ending Nov. 1, 1897.

The work of the department has increased continuously since its organization three years ago. This has required the assignment of assistants in certain classes of work and an increase in number from 32 to 51 during the year. The employees are rated as follows: 1 chief and 6 assistant engineers, 4 draughtsmen, 10 transitmen, 13 assistant transitmen, 12 rodmen, 4 inspectors and 1 office clerk. The engineering work incidental to construction occupies exclusively the time of 18 men. The work in Fellsway, Fellsway East and West, Mystic Parkway and Fells Reservation has been under the direction of Assistant Engineer H. A. Hall; and Blue Hills Parkway, Revere Beach Reservation and Parkway, and Stony Brook Reservation under that of Assistant Engineer Charles H. Howes. Topographical and general surveys have been under the direction of Assistant Engineer David A. Ambrose; and the office, with plans and supplies, in charge of the head draughtsman, Louis V. Foster.

The following is a tabulated statement prepared from the accession catalogue of plans made by this department during the year, omitting all blue and other prints: —

	Abandonment and Conveyance Plans.	Construction.	Copies.	Entrances.	General.	Land and Settlement Plans.	Restriction Plans.	Takings.	Topographical.	Office Working Plans.	Totals.
Parkways: —											
Blue Hills,	-	4	1	1	-	4	-	-	1	3	14
Braintree,	-	-	-	-	-	-	-	1	-	3	4
Fells Parkway,	2	25	3	1	1	15	4	1	1	19	72
Mystic Valley,	1	6	4	3	1	5	-	-	2	7	29
Neponset River,	-	1	5	-	-	1	-	4	1	5	17
Quincy,	-	-	1	-	-	-	-	-	4	17	22
Revere Beach,	2	9	11	-	-	7	-	2	2	5	38
Winthrop,	-	-	2	-	-	-	-	6	-	4	12
Parkway totals,	5	45	27	5	2	32	4	14	11	63	208
Reservations: —											
Beaver Brook,	-	-	1	-	-	1	-	-	1	2	5
Blue Hills,	1	-	2	-	-	7	-	3	-	9	22
Charles River,	3	12	8	-	-	21	-	6	11	58	119
Hemlock Gorge,	1	-	1	-	-	1	-	-	-	3	6
Middlesex Fells,	-	5	-	-	1	3	-	2	-	17	28
Neponset River,	-	-	-	-	-	-	-	2	-	-	2
Revere Beach,	10	25	4	-	1	55	-	11	1	26	133
Stony Brook,	-	13	2	-	-	20	-	-	-	9	44
Reservation totals,	15	55	18	-	2	108	-	24	13	124	359
Grand totals,	20	100	45	5	4	140	4	38	24	187	567

There are now 1,013 plans recorded as on file in this office.

The following is a summarized statement of vouchers issued by the Engineering Department, including, under construction, the entire estimated value of work performed during the year ending Nov. 1, 1897: —

	Boundaries, — Fencing and Monuments.	Construction.	Maintenance.	Totals.	Incidental to Engineering.							Grand Totals.
					Miscellaneous Expenses.	Office.	Pay Rolls and Clerical Work.	Supplies.	Surveying and Drawing Instruments.	Travel.	Totals.	
Equipment,	-	-	-	-	$14 41	$495 78	-	-	$1,193 71	-	$1,703 90	$1,703 90
Operating Expenses,	-	-	-	-	-	1,113 26	-	$649 01	99 45	-	1,861 72	1,861 72
Miscellaneous,	-	-	-	-	-	-	$460 00	-	-	$83 05	543 05	543 05
Parkways: —												
Blue Hills,	-	$7,227 93	$424 22	$7,652 15	15 50	-	771 60	10 75	-	16 00	813 85	8,466 00
Braintree,	-	-	1 60	1 60	-	-	43 10	-	-	13 50	56 60	58 20
Fells Parkway	-	144,640 74	220 50	144,861 24	134 59	-	4,841 35	169 35	-	320 25	5,465 54	150,326 78
Mystic Valley,	$103 00	72,232 63	130 00	72,465 63	95 25	-	3,788 95	57 70	-	135 30	4,077 20	76,542 83
Neponset River,	-	-	-	-	9 15	-	352 00	-	-	-	361 15	361 15
Quincy,	-	-	-	-	120 75	-	1,024 15	-	-	68 00	1,212 90	1,212 90
Revere Beach,	-	58,462 82	-	58,462 82	38 36	-	2,061 35	6 75	-	32 50	2,138 96	60,601 78
Spy Pond,	-	-	-	-	1 45	-	23 20	-	-	-	24 65	24 65
Winthrop,	-	-	-	-	24 81	-	925 55	-	-	20 00	970 36	970 36
Parkway totals,	$103 00	$282,564 12	$776 32	$283,443 44	$439 86	-	$13,831 25	$244 55	-	$605 55	$15,121 21	$298,564 65
Reservations: —												
Beaver Brook,	-	-	-	-	$5 75	-	$92 50	-	-	-	$98 25	$98 25
Blue Hills,	-	-	-	-	12 65	-	545 40	$5 80	-	$113 00	676 85	676 85
Charles River,	$90 14	$836 93	-	$927 07	147 32	-	3,916 05	34 75	$14 60	123 60	4,236 32	5,163 39
Hemlock Gorge,	-	-	-	-	3 47	-	120 65	-	-	-	124 12	124 12
King's Beach,	-	-	-	-	-	-	5 80	-	-	-	5 80	5 80
Middlesex Fells,	-	3,832 00	-	3,832 00	28 97	-	1,456 15	17 50	-	17 00	1,519 62	5,351 62
Neponset River,	-	-	-	-	-	-	12 00	-	-	-	12 00	12 00
Revere Beach,	-	68,623 71	-	68,623 71	103 03	$5 00	4,702 70	128 25	-	182 00	5,120 98	73,744 69
Stony Brook,	-	2,042 60	-	2,042 60	37 89	-	1,547 60	45 50	-	82 00	1,712 99	3,755 59
Reservation totals,	$90 14	$75,335 24	-	$75,425 38	$339 08	$5 00	$12,398 85	$231 80	$14 60	$517 60	$13,506 93	$88,932 31
Grand totals,	$193 14	$357,899 36	$776 32	$358,868 82	$793 35	$1,614 04	$26,690 10	$1,125 36	$1,307 76	$1,206 20	$32,736 81	$391,605 63

The total given in the previous table for pay rolls and clerical work of the Engineering Department is summarized in the following table: —

	Abandonments and Conveyances.	Boundaries, — Verification, Staking and Monuments.	Construction, Incidental to Actual.	Construction, Preliminary to.	Entrances.	General.	Land and Settlements, — Surveys and Plans.	Maintenance.	Restrictions, — Surveys and Plans for.	Takings.	Topographical.	Totals.
Parkways: —												
Blue Hills,	–	$11 35	$388 75	$159 60	$13 00	$28 05	$15 55	$112 60	–	–	$42 70	$771 60
Braintree,	–	–	–	–	–	–	–	–	–	–	43 10	43 10
Fells Parkway,	$14 60	57 00	3,429 00	782 15	4 30	78 40	315 40	50 80	$16 20	$32 60	60 90	4,841 35
Mystic Valley,	3 00	–	3,029 65	246 50	54 10	69 65	48 40	–	–	–	337 65	3,788 95
Neponset River,	–	–	–	–	–	2 90	–	–	–	247 15	101 95	352 00
Quincy,	–	–	–	–	–	–	–	–	–	17 40	1,006 75	1,024 15
Revere Beach,	5 50	–	1,350 55	164 20	–	4 15	105 75	–	–	389 50	41 70	2,061 35
Spy Pond,	–	–	–	–	–	–	–	–	–	–	23 20	23 20
Winthrop,	–	–	–	–	–	–	–	–	–	925 55	–	925 55
Parkway totals,	$23 10	$68 35	$8,197 95	$1,352 45	$71 40	$183 15	$485 10	$163 40	$16 20	$1,612 20	$1,657 95	$13,831 25
Reservations: —												
Beaver Brook,	–	–	$11 60	–	–	$15 00	$41 90	–	–	–	$24 00	$92 50
Blue Hills,	$37 50	–	5 50	–	–	9 80	285 75	–	–	$206 85	–	545 40
Charles River,	45 85	$30 40	37 80	$559 65	–	86 20	376 70	$2 50	–	719 70	2,057 25	3,916 05
Hemlock Gorge,	7 50	–	–	59 60	–	22 30	20 15	–	–	–	11 10	120 65
King's Beach,	–	–	–	–	–	–	5 80	–	–	–	–	5 80
Middlesex Fells,	–	330 80	233 80	675 05	$2 40	51 15	41 60	–	$3 50	117 85	–	1,456 15
Neponset River,	–	–	–	–	–	–	11 20	–	–	0 80	–	12 00
Revere Beach,	256 05	5 40	2,489 50	811 35	–	112 00	829 30	–	–	137 25	61 85	4,702 70
Stony Brook,	–	12 05	173 60	770 35	–	17 05	574 55	–	–	–	–	1,547 60
Reservation totals,	$346 90	$378 65	$2,951 80	$2,876 00	$2 40	$313 50	$2,186 95	$2 50	$3 50	$1,182 45	$2,154 20	$12,398 85
Miscellaneous,	–	–	–	–	–	460 00	–	–	–	–	–	460 00
Grand totals,	$370 00	$447 00	$11,149 75	$4,228 45	$73 80	$956 65	$2,672 05	$165 90	$19 70	$2,794 65	$3,812 15	$26,690 10

The two preceding tables show that engineering and inspection for construction, omitting travelling and other incidental expenses, has ranged from 2 per cent. to 8 per cent., the average being 3.11 per cent.

An appraisal of property belonging to the Commonwealth in charge of the Engineering Department, omitting the value of maps, plans, notes and other records, is as follows: —

Equipment: —		
Offices,	$1,540 15	
Surveying and drawing instruments,	3,674 25	
Incidentals,	51 35	
		$5,265 75
Supplies: —		
General,		735 10
Total,		$6,000 85

Parkways.

Blue Hills Parkway. — The maintenance of Blue Hill Avenue, Mattapan and Harland streets within the limits of this parkway has necessitated an expenditure of $485.62. The resurfacing of Canton Avenue by the town of Milton made it necessary to continue the work over that portion within the taking, at a cost of $1,520, under contract with said town. Construction plans, contract and specifications for the construction of this parkway from Neponset River for a distance of 1,500 feet to Brook Road were prepared in July. In anticipation of this proposed work, Milton began in July the building of a double line of sewers, with the expectation of its completion before parkway construction; but this work is unfinished and still in progress. Proposals for the construction of the above-mentioned section of parkway were received Aug. 23, 1897, from the following contractors: —

David M. Biggs, Dorchester,	$28,474 70
Doherty & Connors, Roxbury,	26,375 20
Collins & Ham, South Boston,	22,091 00
D. Cuozzo, Wellesley Hills,	20,622 20
Coleman Brothers, Charlestown,	20,309 90
Pierce F. Lonergan & Co., Boston,	20,084 40
McCusker Brothers, Waltham,	19,811 00

David Scanlon, Medford,	$18,034 40
Owen Cunningham & Son, Somerville,	16,629 00
A. J. Wellington, Boston,	16,142 00
Aab & Co., Waltham,	15,906 80
T. Stuart & Son, Newton,	15,225 50
Wm. H. Mague, Newton,	15,035 00
John A. Whittemore's Sons, Boston,	15,021 60
Frank X. Saucier, Boston,	14,748 20

The contract was awarded to Frank X. Saucier, at the following prices: —

	Price.	Amount.
7,000 cubic yards earth grading,	$0 21	$1,470 00
8,000 cubic yards filling material,	43	3,440 00
800 lineal feet 8-inch pipe drain,	26	208 00
500 lineal feet 12-inch pipe drain,	40	200 00
1,100 lineal feet 18-inch pipe drain,	65	715 00
50 cubic yards brick masonry,	12 00	600 00
10 cubic yards rubble masonry,	4 50	45 00
1,000 lineal feet edgestone,	1 20	1,200 00
3,450 square yards gravel-walk surfacing,	06	207 00
9,500 square yards loam surfacing,	08	760 00
12,560 square yards broken-stone surfacing,	47	5,903 20
Total,	. .	$14,748 20

Work under this contract, dated August 25, began September 3, and is in progress at the present time. The estimated value of work done to October 31 is $7,166.44.

Braintree Parkway. — A survey has been made at the request of citizens of Braintree for a suggested parkway from Washington Street along West Street to the Blue Hills Reservation, a distance of 2 miles.

Fellsway (Middlesex Fells Parkway). — The construction of this parkway was divided into two sections: the first, a length of 1.29 miles, from Mystic Avenue, Somerville, to the Medford branch of the Boston & Maine Railroad, Medford; the second, a length of .95 of a mile, from the Medford branch to Pleasant Street, Malden, and to Salem Street, Medford. Proposals for the construction of both sections were received Jan. 25, 1897, from the following: —

First Section.

Thomas Gavin, Watertown,	$155,165 50
A. W. Bryne Construction Company, Medford,	116,520 00
McCusker Brothers, Waltham,	112,477 00
The C. H. Eglee Company, Boston,	108,956 50
Wm. H. Mague, Newton,	105,415 00
Doherty & Connors, Roxbury,	104,113 00
T. Stuart & Son, Newton,	101,530 00
W. J. McCarthy & Co., Somerville,	101,173 00
Neil McBride, Brighton,	99,686 50
Crimmings & Gill, Somerville,	99,614 00
Long & Little, Leominster,	99,043 00
J. P. O'Connell & Co., Dorchester,	97,544 50
Richard Falvey, Somerville,	93,181 00
Russo & Solomone, Boston,	92,130 00
Aab & Co., Waltham,	87,573 60
James McGraw, Fayville,	86,723 00
H. P. Nawn, Boston,	83,542 50
Edward W. Everson & Co., Newton,	83,436 00
T. W. Kinser & Sons, Waltham,	82,241 00
Joseph D Gennaro, Boston,	81,910 50
Thomas F. Maney & Co., Cambridge,	80,605 75
A. J. Wellington, Boston,	78,955 00
Coleman Brothers, Charlestown,	72,877 00

The contract was awarded to Coleman Brothers, at the following prices: —

	Price.	Amount.
85,000 cubic yards earth grading,	$0 32	$27,200 00
45,000 cubic yards filling material,	53	23,850 00
3,000 cubic yards loam,	57	1,710 00
1,900 lineal feet 8-inch pipe drain,	20	380 00
2,300 lineal feet 10-inch pipe drain,	25	575 00
300 lineal feet 12-inch pipe drain,	30	90 00
300 lineal feet 15-inch pipe drain,	40	120 00
200 cubic yards brick masonry,	12 00	2,400 00
50 cubic yards rubble masonry,	4 00	200 00
1,170 lineal feet edgestone,	1 00	1,170 00
10,000 square yards gravel-walk surfacing,	16	1,600 00
25,000 square yards loam surfacing,	07	1,750 00
40,800 square yards broken-stone surfacing,	29	11,832 00
Total,		$72,877 00

Work under this contract, dated January 29, began February 8, and is still in progress, with an estimated value of

work to the amount of $72,363.15 done to October 31. There has been on this work necessarily a large amount of excavated material overhauled, the limit being 1,000 feet, which has been provided for in the contract but is not included in the canvas of bids; this amount is now $8,343.79, and is included in the amount of work performed.

Second Section.

Neil McBride, Brighton,	$111,455 50
Long & Little, Leominster,	106,989 00
The C. H. Eglee Company, Boston,	103,460 00
Aab & Co., Waltham,	97,194 30
Thomas Hurley, Lynn,	94,026 90
A. W. Bryne Construction Company, Medford,	92,165 00
McCusker Brothers, Waltham,	90,764 50
J. P. O'Connell & Co., Dorchester,	89,908 50
The Middlesex Construction Co., Boston,	85,838 60
H. P. Nawn, Boston,	82,726 50
Wm. H. Mague, Newton,	81,890 00
A. J. Wellington, Boston,	81,205 00
Welsh, Sheehan & Howard, Malden,	80,511 00
Coleman Brothers, Charlestown,	77,250 00
T. W. Kinser & Son, Waltham,	75,104 00
Edw. W. Everson & Co., Newton,	73,394 00
James McGraw, Fayville,	72,006 00
Thomas F. Maney & Co., Cambridge,	71,541 30
Joseph D. Gennaro, Boston,	70,611 50

This contract was awarded to Joseph D. Gennaro, at the following prices: —

	Price.	Amount.
20,000 cubic yards earth grading,	$0 25	$5,000 00
75,000 cubic yards filling material,	48	36,000 00
2,600 lineal feet 8-inch pipe drain,	21	546 00
600 lineal feet 10-inch pipe drain,	26	156 00
1,200 lineal feet 12-inch pipe drain,	33	396 00
220 lineal feet 18-inch pipe drain,	65	143 00
250 lineal feet 20-inch pipe drain,	85	212 50
250 cubic yards brick masonry,	14 00	3,500 00
400 cubic yards rubble masonry, dry,	3 50	1,400 00
10 cubic yards rubble masonry, pointed,	3 50	35 00
2,190 lineal feet edgestones,	1 25	2,737 50
8,000 square yards gravel-walk surfacing,	16	1,280 00
18,700 square yards loam surfacing,	08½	1,589 50
36,700 square yards broken-stone surfacing,	48	17,616 00
Total,		$70,611 50

Work under this contract, dated January 29, began February 10, and is still in progress, with an estimated value of work to the amount of $57,208.77 done to October 31. These two sections will probably be completed early next summer.

The Metropolitan Water Board has laid a 48-inch water main in this parkway for a distance of 1,400 feet in Somerville from Mystic Avenue to Middlesex Avenue. A bridge of 29½ feet span and 80 feet wide has been built to carry the roadway over the Medford Branch Railroad. The stone abutments of first-class stone masonry were put in under the supervision of the engineer of the Boston & Maine Railroad. Six bids were received for this work, and it was awarded to the lowest, Ellis & Buswell, at these prices: $5.50 per cubic yard for masonry, $0.08 per cubic yard for excavation and $0.30 per lineal foot for pipe culvert. The total cost of the abutments, including engineering, was $8,358.56. Three proposals were received by this department for the steel superstructure from Massachusetts concerns, and it was furnished in place for $2,085 by the Boston Bridge Works, the lowest bidders. The total cost of the bridge was $10,443.56, exclusive of approaches.

Fellsway East. — This section was completed last season, and the work done this year has consisted in making repairs to the surface, paving of gutters on portion between Pine and Wiley streets, filling of slight settlements along Fellsmere and the setting of stone bounds on taking lines. In this parkway the Metropolitan Water Board has had a water main laid from Highland Avenue to the Fells Reservation at Bears' Den Entrance.

Fellsway West. — This branch of the Fells Parkway is in Medford, and extends across Salem Street, along Valley Street to Fulton Street, crossing the latter and private lands to Forest Street, a total length of .89 of a mile. Valley Street is within the taking lines for the greater length of this section, and its condition was such as to require a large expenditure for repairs, and it was decided to build the parkway rather than repair the street. Proposals for the construction of Fellsway West were received Oct. 18, 1897, from the following: —

Long & Little, Leominster,	$48,631 00
Fred E. Ellis, Melrose,	46,452 50
Byron & Dyer, Medford,	44,269 70
Malone & McHale, Mt. Auburn,	41,962 00
Charles Linnehan, Cambridge,	41,880 10
Welch & Sheehan, Malden,	39,979 50
Wm. J. McCarthy, Somerville,	39,553 00
D. Cuozzo, Wellesley Hills,	39,233 50
T. Stuart & Son, Newton,	39,046 40
M. Gill & Son, Somerville,	37,959 00
McCusker Brothers, Waltham,	37,413 00
R. Falvey, Somerville,	36,617 00
A. J. Wellington, Boston,	35,778 50
Coleman Brothers, Charlestown,	34,839 50
David Scanlon, Medford,	34,783 60
John A. Whittemore's Sons, Boston,	33,707 00
Frank X. Saucier, Boston,	32,119 00
Michael Tallent & Co., Everett,	31,325 83

This contract was awarded to Michael Tallent & Co., at the following prices: —

	Price.	Amount.
32,000 cubic yards earth grading,	$0 23	$7,360 00
4,000 cubic yards rock grading,	1 25	5,000 00
1,600 lineal feet 8-inch pipe drain,	19½	312 00
750 lineal feet 10-inch pipe drain,	35	262 50
1,780 lineal feet 12-inch pipe drain,	35	623 00
180 lineal feet 15-inch pipe drain,	50	90 00
280 lineal feet 18-inch pipe drain,	50	140 00
140 cubic yards brick masonry,	13 00	1,820 00
130 cubic yards rubble masonry,	3 90	507 00
1,200 lineal feet edgestone,	1 02½	1,230 00
600 square yards paved gutters,	1 33⅓	800 00
8,000 square yards gravel-walk surfacing,	21	1,680 00
24,800 square yards loam surfacing,	07⅔	1,901 33
32,000 square yards broken-stone surfacing,	·30	9,600 00
Total,	. .	$31,325 83

Work under this contract began October 28. No estimate has been rendered of work performed.

The uncompleted portions of Fells Parkway from Mystic Avenue in Somerville to the Fells Reservation in Malden and Medford are now under contract, to be completed in July, 1898. The total length, including the 1 mile completed in Fellsway East, is 4.13 miles.

Mystic Valley Parkway. — This driveway and adjacent park land is now completed for its 2.4 miles of length, with the exception possibly of some planting and grading to screen the railroad. The work of filling of low land in Winchester, referred to in the last report as in progress, was completed by the contractors in December, 1896, at a total cost of $5,075.59.

Additional work was done under several contracts of small amount: filling of low land by Thomas Quigley, for $753.48; filling and grading the Aberjona Bridge approaches by P. H. Byron, for $2,243.38; and grading in rear of the Unitarian Church, and a large borrow-pit, by McCusker Brothers, for $2,539.40.

The grading and surfacing of the lands outside of the drive was mainly done by contract, for which proposals were received Nov. 30, 1896, from the following: —

Richard Falvey, Somerville,	$25,535 00
Collins & Ham, Boston,	20,980 50
Long & Little, Leominster,	19,950 00
W. H. Mague, Newton,	18,510 00
J. A. Whittemore's Sons, Boston,	18,319 50
Neil McBride, Brighton,	18,284 00
Holbrook, Cabot & Daley, Newton,	17,599 00
McCusker Brothers, Waltham,	17,567 00
Joseph D. Gennaro, Boston,	17,515 50
Solomone & Russo, Boston,	17,221 50
M. Gill & Son, Somerville,	16,931 50
Newell & Snowling, Uxbridge,	16,704 00
Frank X. Saucier, Boston,	16,055 50

Awarded to Frank X. Saucier, at the following prices, and completed July 1: —

	Price.	Amount.
45,000 cubic yards earth grading,	$0 20¾	$9,337 50
350 lineal feet 8-inch pipe drain,	28	98 00
100 lineal feet 10-inch pipe drain,	32	32 00
15 cubic yards brick masonry,	9 60	144 00
100 cubic yards rubble masonry,	4 00	400 00
6,800 square yards gravel-walk surfacing,	10	680 00
59,600 square yards loam surfacing,	09	5,364 00
Total,		$16,055 50

The bridge over the Aberjona River was tested last year in December with a 14-ton steam road roller. This bridge has a span of 50 feet, with stone abutments and superstructure of the riveted, arched-steel girder type. The greatest deflection with roller on centre of bridge was .015 of a foot, and with roller at centre near gutter line, .03 of a foot, the arch returning to normal elevation on removal of load. For the economical watering of the drive a 4-inch water supply pipe was laid with 6 stand-pipes from the Medford system at High Street for a distance of about 8,600 feet, at a cost of $3,913.84. To complete the parkway there remained the surfacing of the driveway, for which proposals were received April 20 for both gravel and broken stone. The gravel surfacing, for which the following proposals were received, was adopted: —

Frank X. Saucier, Boston,	$30,158 75
M. Gill & Son, Somerville,	29,182 50
J. A. Whittemore's Sons, Boston,	25,707 50
McCusker Brothers, Waltham,	16,367 50

At the following prices the contract was awarded to McCusker Brothers: —

	Price.	Amount.
7,000 cubic yards earth grading,	$0 25	$1,295 00
3,500 cubic yards loam,	1 25	2,800 00
1,050 lineal feet edgestone setting,	35	157 50
22,000 square yards loam surfacing,	09	1,760 00
54,500 square yards gravel surfacing,	38	10,355 00
Total,		$16,367 50

This work, begun May 4, was finished September 3, at a cost of $20,679.66. Included in this amount were cost of filling material furnished for raising the sub-grade, cost of overhaul, and several small pieces of additional grading and drainage work. The entire driveway was lighted for the first time September 30, with 66 lights spaced about 200 feet apart. These are furnished and operated under a one-year's contract with the Welsbach Street Lighting Company, and have given excellent results.

Early in September the parkway was opened to the public, and the large numbers by which it is frequented attest its beauty and popularity.

Topographical surveys preliminary to studies for future extensions have been made down the Mystic Valley to the bridge of the southern division of the Boston & Maine Railroad and up the Alewife Brook to Fresh Pond.

Neponset River. — Several surveys have been made, showing topography and lines for study and investigation of various routes for parkway from Stony Brook Reservation towards the Blue Hills Reservation as far as Paul's Bridge in Milton.

Quincy Parkway. — Topographical surveys and maps covering a distance of about 8 miles have been completed from Milton station, down the Neponset River, along the Quincy Shore, and up the valley of Furnace Brook to Blue Hills Reservation. Estimates of construction and surveys for takings are now in progress.

Revere Beach Parkway. — Immediately after takings were made for a portion of a parkway from the southern circle of the Revere Beach Reservation to Campbell Avenue, construction plans and specifications were prepared therefor, and a satisfactory contract made for construction with the contractors for the new Boston, Revere Beach & Lynn Railroad. This piece of work is for a double roadway, which, with planting spaces and sidewalks, is 120 feet in width and .62 of a mile in length. The work is necessarily of considerable magnitude, involving a bridge over the railroad near Beachmont and high embankments for bridge approaches. The drainage, sub-grading and masonry work is now under way by the contractors, John J. O'Brien & Co., at the following prices: —

Earth grading (per cubic yard),	$0 40
Filling material (per cubic yard),	35
12-inch pipe drains (per lineal foot),	75
24-inch double-strength pipe drain (per lineal foot),	3 10
First-class masonry (per cubic yard),	8 00
Third-class masonry (per cubic yard),	5 00
Concrete (per cubic yard),	5 00
Timber (per thousand feet B. M.),	20 00
Wrought-iron work (per pound),	03
Cast-iron work (per pound),	02

The estimated value of work done to date, including the total cost of the bridge, is $54,930.19. The price for the superstructure paid to the Boston Bridge Works was $3,500.

Taking and other surveys are now being made for the extension of this parkway in Revere, Everett and Medford.

Winthrop Parkway. — Surveys and plans showing alternative lines have been prepared from the Revere Beach Reservation to Great Head in Winthrop.

Reservations.

Beaver Brook. — A 15-inch pipe for surface drainage has been laid by the town of Belmont, under permit granted by the Commission, in the southern section from North Street, near the eastern boundary, for a distance of about 300 feet to the brook. North and Mill streets have been laid out by the county commissioners and widened and regraded by Belmont. Incidental work under the direction of the Superintendent has been done on the reservation in easing and sodding the slopes to the improvement of their appearance.

Charles River. — A short length of filling on location of proposed boundary road has been done in Watertown from Arsenal Street towards the Cambridge Cemetery with material obtained at cost from town work being performed in the vicinity. A topographical survey preliminary to determining proposed takings has been made for a distance of 11 miles up the river from the end of takings in Watertown to the Hemlock Gorge Reservation, and surveys and plans based on these are now nearly completed for the actual takings. Topographical surveys with sufficient detail for preparation of construction plans have been made in Brighton from Cambridge Street to Western Avenue near the Abattoir, and also in Watertown from North Beacon to Riverside Street. The removal of old buildings has necessitated a small amount of grading and filling in several places and the building of short lengths of fence.

Investigations and surveys have been made for the development of the speedway section in Brighton from North Harvard Street to Western Avenue. From these results construction plans and specifications have been prepared and proposals received from contractors for the drainage,

dyke and sub-grading work. The plans provide for a broad walk and driveway 1.74 miles in length along the entire taking line, and parallel to the drive on the river side for the requisite distance for a mile track and terminals, a speedway 50 feet in width.

Hemlock Gorge. — Only a small amount of work has been done by this department in this reservation. Several buildings have been removed, cellars filled and graded. Boylston Street and a portion of Ellis Street have been widened to the established lines by the city of Newton, and some incidental filling, loam surfacing and seeding performed.

Middlesex Fells. — The boundaries of this reservation have been permanently established by stone monuments. The boundary road from Bears' Den Entrance westerly to Highland Avenue has been completed by the contractor, Andrew Carberry, at a cost of $4,044.53, or, including the paved gutters by a separate contract, $4,650.58. This is at the rate of $8,000 a mile, and, while the road is only 20 feet in width, it involved deep fills and cuts and much rock excavation. Construction plans were prepared during the winter months for proposed boundary road 2.22 miles in length from Forest Street in Medford to Mt. Vernon Street in Winchester. This when built will form a continuation of the southerly roadway of Fellsway West. About one-quarter of a mile has already been constructed as a necessary connection with existing roads in the reservation by the reservation Superintendent. The laying of a water main by the Metropolitan Water Board in the reservation made it advisable to rebuild the road in which it was partly laid, from the Bears' Den Entrance through the Jerry Jingle Notch for a distance of 1,400 feet. This road is one of the main entrances leading into the western section from Bears' Den Entrance at the end of Fellsway West. This work was done partly with the surplus material from the water pipe trench furnished by the Water Board, partly by contract with its contractor, and partly by the regular force of laborers employed in the reservation. The ruling grade has been reduced from 14½ feet to 9 feet in 100 feet.

Construction plan and specifications are ready for an entrance from the Stoneham side of the Fells, connecting

Marble Street at the corner of Park Street with the reservation at the base of Bear Hill. This entrance is to be nearly one-half mile in length, and proposals for its construction are requested by public advertisement.

Revere Beach. — Active work has been in progress the entire season on the beach. The location of its various features received early and careful consideration. The construction of drive with incidental work has been done under the supervision of this department; the bath-house, terrace walls and structures thereon, under that of the architect. Twelve artesian wells driven to a depth of 86 feet below grade, 12 through 29 feet of gravel, 52 feet of clay and 5 feet into a sub-stratum of gravel furnish an ample supply of excellent water to the bath-house. The portion of the beach along which the work has been in progress extends from the southern circle, at the end nearest Boston, for a distance of $1\frac{1}{5}$ miles to Revere Street, nearly one-half the entire length of the reservation. The construction of the drive began May 12, John J. O'Brien & Co., contractors, and is now completed except the surfacing and edgestones for a length of about 900 feet at the southern end, left until next season to allow settlement of filling. The edgestones and gutters have been made of a fine quality of Portland cement concrete, for which a separate contract was entered into with the Murdock Parlor Grate Company of Boston. The estimated value of work done for the year, as shown by estimates and bills approved by the undersigned, amounts to $68,623.71, or, sub-divided, contract with John J. O'Brien & Co., $54,937.11; Murdock Parlor Grate Company, $11,805.90; and miscellaneous vouchers, $1,880.70.

The finished section provides a 40-foot drive with surface at grade 19, a 20-foot sidewalk on the landward side next to the boundary line of the reservation, and a 20-foot promenade on the opposite or ocean side. Extending the entire 2.7 miles length of this reservation was a thin ridge, composed entirely of small loose stone or shingle, forming a backing for the broad sandy beach, and acting as a protection to the marshes in the rear. The average rise of tide here is 9.3 feet. The top of the ridge within the limits of the construction work, between southern circle and Revere

REVERE BEACH DRIVEWAY.

Street, originally occupied by the tracks of the Boston, Revere Beach & Lynn Railroad, varied from 16 feet to 21 feet, the average being 20 feet, above mean low water. The width of the crest was such as to require widening for nearly one-half its length by bringing in filling material, but none was deposited below mean high-water line. The average width through the ridge at grade 15 is 125 feet. The rear slope to marsh level, about grade 11, is abrupt, and is now generally covered by buildings. The average slope of the beach from mean low water up to grade 5 is at the average rate of 1.7 feet in 100 feet; from grade 5 to grade 10, 3.5 feet in 100 feet; and from grade 10 to 15, 7.7 feet. The distance from the centre line of ridge to mean low water is about 550 feet, and at extreme low water a sandbar is exposed, extending out very nearly level from 500 feet to 1,000 feet farther. Careful observations have been made of the beach during the season, from levels taken at intervals, on sections 500 feet apart. These have been made for the entire length of beach within reservation limits, but data herein recorded refers only to the portion south of Revere Street. The sands between high and low water are constantly shifting, the rapidity and amount depending upon the state of the ocean. There appears to be an almost inexhaustible supply of sand in the long, low bar lying off the beach at about low-water elevation; and, although a large quantity of sand for construction purposes has been removed from between high and low water, no permanent effect to the beach has yet been noticeable. A storm with high waves carries out sand, to be slowly returned with the ocean in its normal state. The maximum change in beach surface as observed has been about 4 feet, the average being not over 2 feet.

Stony Brook. — Construction plans have been prepared of both boundary roads. Proposals for the construction of a road 2 miles in length, extending from Washington Street in Boston, opposite the terminus of the West Roxbury Parkway, through the interior of the reservation to West Glenwood Avenue in Hyde Park, were received Sept. 13, 1897, from the following: —

F. X. Saucier, Boston,	$20,307 50
T. Stuart & Son, Newton,	18,960 00
David Scanlon, Medford,	17,095 00
H. P. Nawn, Boston,	14,460 00
M. Gill & Son, Somerville,	12,500 00
McCusker Brothers, Waltham,	12,500 00
J. A. Whittemore's Sons, Boston,	11,535 00
D. Cuozzo, Wellesley Hills,	11,390 00
Owen Cunningham & Son, Somerville,	10,160 00

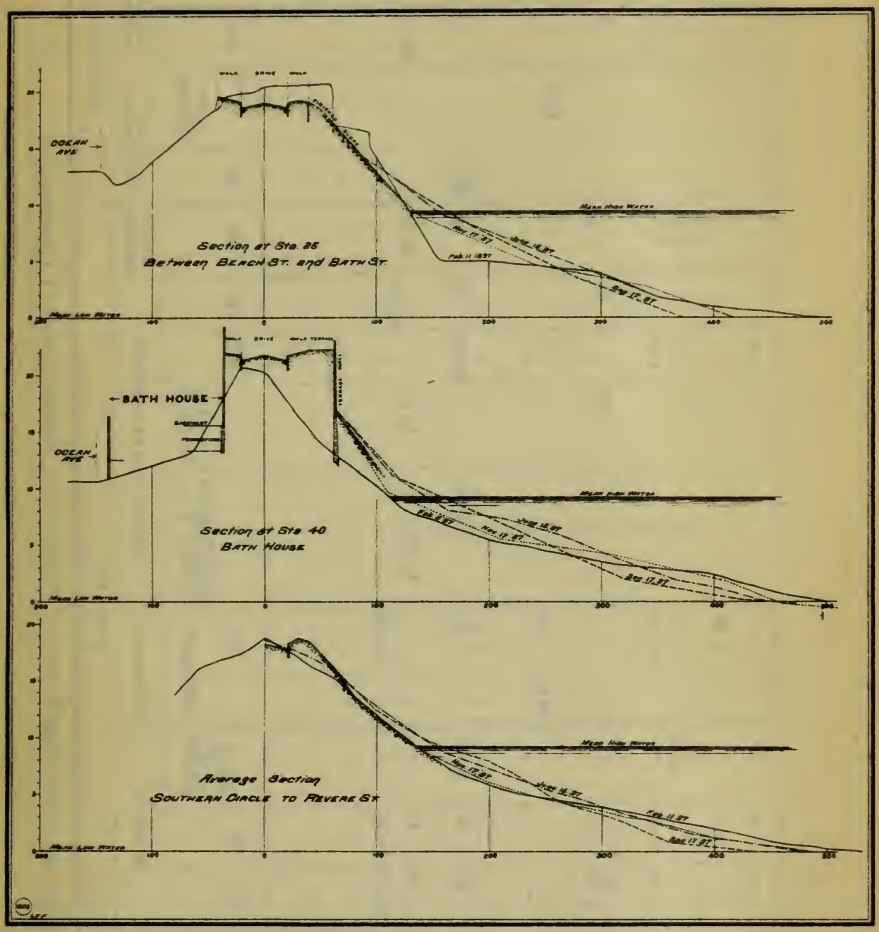
The contract was awarded to Owen Cunningham & Son, at the following prices: —

	Price.	Amount.
5 acres clearing,	$100 00	$500 00
15,000 cubic yards earth grading,	25	3,750 00
1,000 cubic yards rock grading,	1 70	1,700 00
600 lineal feet 12-inch pipe drain,	45	270 00
50 cubic yards rubble masonry,	2 50	125 00
2,500 square yards cobble-stone gutters,	35	875 00
28,000 square yards gravel surfacing,	10	2,800 00
2,000 square yards loam surfacing,	07	140 00
Total,	. .	$10,160 00

This work began September 27, under contract dated September 22, and $2,042.60 is the estimated value of work performed.

Respectfully submitted,

WM. T. PIERCE,
Engineer.



CROSS SECTIONS OF REVERE BEACH RESERVATION

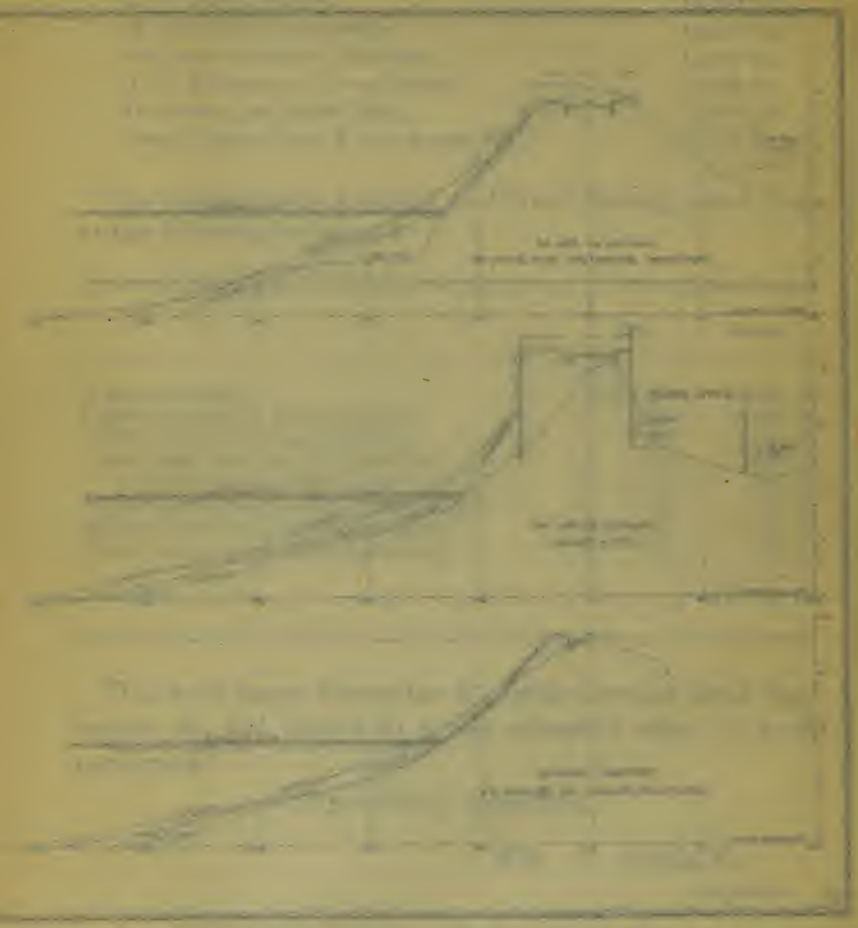
TO ACCOMPANY REPORT OF THE ENGINEERING DEPARTMENT

METROPOLITAN PARK COMMISSION

Wm. T. Peirce, Engineer

Dec. 6, 1897.

PHOTO-LITH. & PRINTED, FORBES CO. BOSTON.



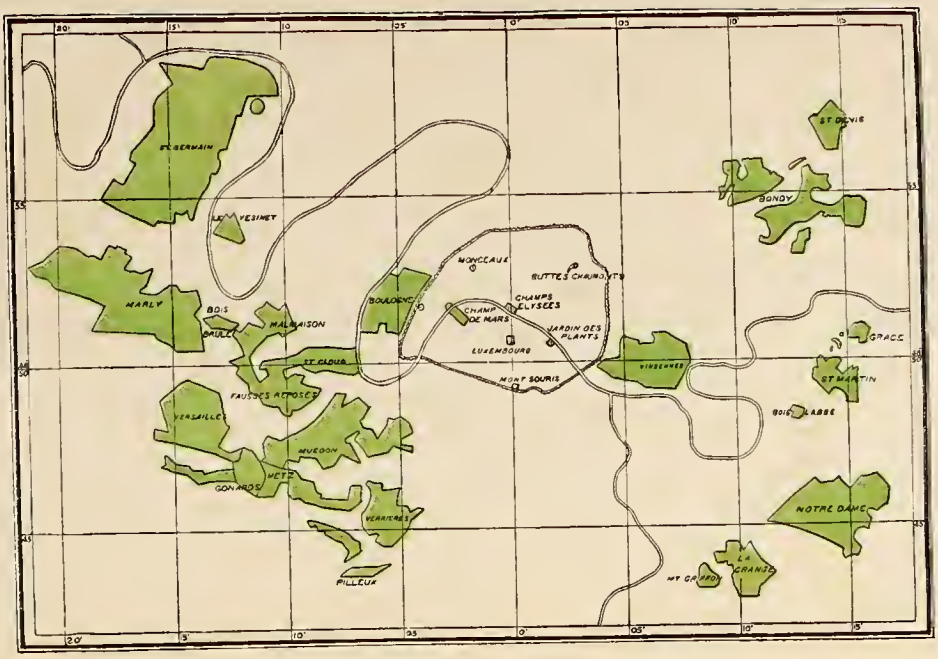
Prices paid for the Year ending Nov. 1, 1897, for Principal Items of Construction.

	Parkways.												Reservations.				
	Blue Hills.	Fellsway.			Fellsway.		Mystic Valley Parkway.					Revere Beach.	Middlesex Fells.		Revere Beach.		Stony Brook.
Contract No.:—	17.	8.	9.	Bridge Abutments.	East.	West. 22.	Thomas Quigley	P. H. Byron	McCusker Bros.	7.	12.	10.	19.	Coleman Bros.	13.	18.	21.
Edgestones:—																	
Artificial stone, 17 inches deep (lineal foot),	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	$0 50	-
Artificial stone, 20 inches deep (lineal foot),	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	-
Furnishing and setting (lineal foot),	$1 20	$1 00	$1 25	-	-	$1 02½	-	-	-	-	-	-	-	-	-	-	-
Setting only (lineal foot),	-	-	-	-	-	-	-	-	-	-	$0 15	-	-	-	-	-	-
Filling material (cubic yard),	43	53	48	-	-	-	$0 46	-	$0 50	-	-	$0 35	-	-	$0 35	-	-
Grading, excavation:—																	
Earth (cubic yard),	21	32	25	$0 08	-	23	-	$0 27	-	$0 20¾	18½	40	$0 60	-	40	-	$0 25
Rock (cubic yard),	-	-	-	-	-	1 25	-	-	-	-	-	-	2 00	-	-	-	1 70
Gutters:—																	
Artificial stone (lineal foot),	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45	-
Block paved (square yard),	-	-	-	-	$2 00	1 33⅓	-	-	-	-	-	-	-	-	-	-	-
Cobble stone (square yard),	-	-	-	-	-	-	-	-	-	-	-	-	-	$0 95	-	-	35
Iron work, for C. B.s and M. H.s (100 lbs.),	-	1 39	1 39	-	-	-	-	-	-	-	-	1 39	-	-	-	-	-
Loam, furnishing of (cubic yard),	-	57	-	-	-	-	-	-	80	-	80	-	-	-	50	-	-
Masonry:—																	
Brick (cubic yard),	12 00	12 00	14 00	-	-	13 00	-	-	-	9 60	-	-	-	-	12 00	-	-
Bridge, first class (cubic yard),	-	-	-	5 50	-	-	-	-	-	-	-	8 00	-	-	-	-	-
Bridge, third class (cubic yard),	-	-	-	-	-	-	-	-	-	-	-	5 00	-	-	-	-	-
Concrete (cubic yard),	-	-	-	-	-	-	-	-	-	-	-	5 00	-	-	-	-	-
Rubble dry (cubic yard),	-	-	3 50	-	-	3 90	-	-	-	-	-	-	-	-	-	-	2 50
Rubble dry and painted (cubic yard),	4 50	4 00	3 50	-	-	-	-	-	-	4 00	-	-	-	-	-	-	-

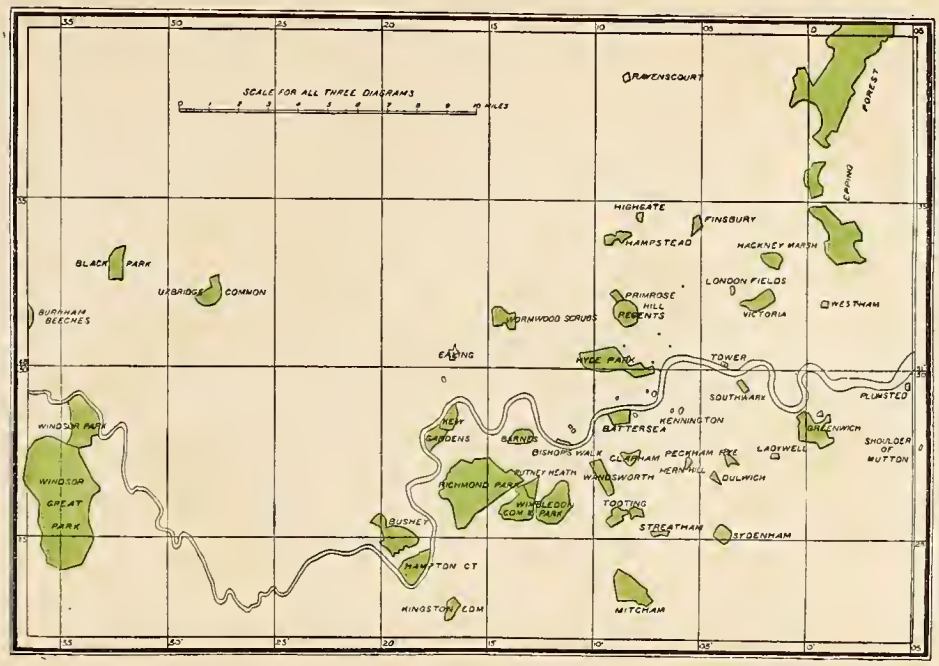
Prices paid for the Year ending Nov. 1, 1897, for Principal Items of Construction — Concluded.

	Parkways.												Reservations.				
	Blue Hills.	Fellsway.			Fellsway.		Mystic Valley Parkway.					Revere Beach	Middlesex Fells.		Revere Beach.		Stony Brook.
CONTRACT No.:—	17.	8.	9.	Bridge Abutments.	East.	West.	Thomas Quigley.	P. H. Byron.	McCusker Bros.	7.	12.	10.	19.	Coleman Bros.	13.	18.	21.
Pipe drains:—																	
8 inch (lineal foot),	$0 26	$0 20	$0 21	-	-	$0 19½	-	-	-	$0 28	-	-	-	-	-	-	-
10 inch (lineal foot),	-	25	26	-	-	35	-	-	-	32	-	-	-	-	$0 60	-	-
12 inch (lineal foot),	40	30	33	-	-	35	-	-	-	-	-	$0 75	-	-	-	-	$0 45
15 inch (lineal foot),	-	40	-	$0 30	-	50	-	-	-	-	-	-	-	-	-	-	-
18 inch (lineal foot),	65	-	65	-	-	50	-	-	-	-	-	-	-	-	-	-	-
20 inch (lineal foot),	-	-	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24 inch, double strength (lineal foot),	-	-	-	-	-	-	-	-	-	-	-	3 10	-	-	-	-	-
Sewers:—																	
8 inch cast iron pipe (lineal foot),	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-
8 inch vitrified pipe (lineal foot),	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 50	-	-
Surfacing:—																	
Broken stone (square yard),	47	29	48	-	-	30	-	-	-	-	-	-	-	-	55	-	-
Gravel roadway (square yard),	-	-	-	-	-	-	-	-	-	-	$0 19	-	-	-	-	-	10
Gravel walk (square yard),	06	16	16	-	-	21	-	-	-	10	-	-	-	-	25	-	-
Loam (square yard),	08	07	08¼	-	-	07⅞	-	-	$0 08	09	08	-	-	-	-	-	07
Timber (1,000 ft. B. M.),	-	-	-	-	-	-	-	-	-	-	-	20 00	-	-	-	-	-

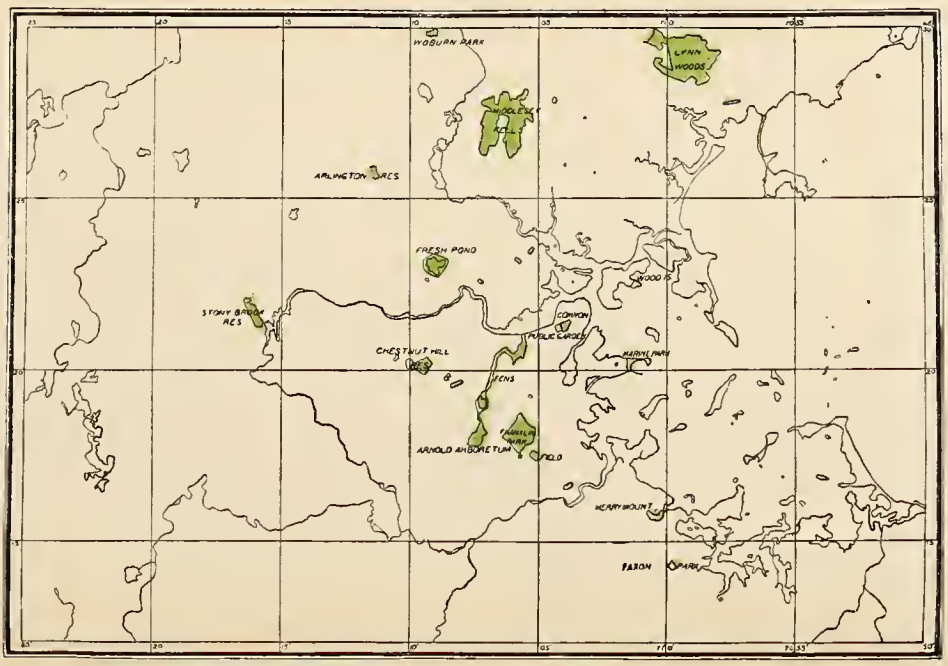
PARIS.



LONDON.



BOSTON.



The open spaces of Paris, London and Boston, drawn to the same scale.

FINANCIAL STATEMENT.

Dec. 1, 1896, to Dec. 1, 1897.

Metropolitan Parks Loan,	$4,400,000 00
Receipts for sales, etc.,	12,987 08
	$4,412,987 08

Expenditures.

Blue Hills Reservation: —			
Land,	$25,873 00		
Labor,	11,514 86		
Police,	3,570 48		
Engineering,	672 85		
Legal,	436 32		
Landscape Architects, fees,	550 00		
Landscape Architects, expenses,	16 49		
Travelling expenses,	65 43		
Keep of horses,	679 88		
Tools, materials, etc,	221 90		
Fire extinguishers,	202 50		
Well,	251 55		
Plans for superintendent's house,	200 00		
Wagons,	291 80		
Harnesses, etc.,	92 38		
Telephone,	167 50		
Fire telephone line,	139 89		
Lumber, drain pipe, etc.,	392 90		
Building bath-house,	48 60		
Repairing stable,	133 75		
Maps, books, etc.,	7 95		
Life buoys,	9 75		
Photographs,	43 87		
Paints,	12 39		
Repairs,	59 98		
Miscellaneous,	27 85		
		$45,683 87	
Am'ts carried forward,		$45,683 87	$4,412,987 08

Am'ts brought forward, . . .		$45,683 87	$4,412,987 08
Middlesex Fells Reservation: —			
Land, ...	$117,755 72		
Labor, . . .	14,550 06		
Police, . .	3,272 07		
Engineering, . .	1,796 92		
Legal, ...	7,745 33		
Landscape Architects, fees, . . .	550 00		
Landscape Architects, expenses, . .	26 07		
Construction Jerry Jingle Notch Road,	980 60		
Construction Bears' Den Entrance Road,	606 05		
Travelling expenses, .	270 30		
Keep of horses, . .	609 58		
Tools, materials, etc.,	785 07		
Lumber, drain pipe, etc., ...	716 71		
Horses, . . .	400 00		
Bicycles, . . .	160 20		
Wagons, . . .	370 00		
Harnesses, etc., . .	179 85		
Telephone, . . .	139 80		
Fire telephone line, .	209 63		
House, . . .	750 00		
Alterations and repairs on house and stable,	2,227 21		
Water rates, . .	19 58		
Paints, . . .	169 66		
Repairs, . . .	132 66		
Snow-roller, . .	25 37		
Fence, . . .	63 10		
Photographs, . .	43 88		
Maps, books, etc., .	7 82		
Grass seed, . . .	37 23		
Field glasses, . .	13 50		
Miscellaneous, . .	123 29		
		154,737 26	
Beaver Brook Reservation: —			
Land, ...	$1,093 46		
Labor, . . .	1,425 88		
Police, . . .	22 83		
Engineering, . .	98 25		
Legal, ...	178 00		
Am'ts carried forward,	$2,818 42	$200,421 13	$4,412,987 08

Am'ts brought forward,	$2,818 42	$200,421 13	$4,412,987 08
Landscape Architects, fees, . . .	100 00		
Landscape Architects, expenses, . .	16 70		
Keep of horses, . .	117 68		
Wagon, . . .	125 00		
Harnesses, etc., . .	40 40		
Tools, materials, etc.,	19 63		
Lumber, etc., . .	14 56		
Paints, . . .	8 81		
Drinking fountain, .	20 25		
Connecting fountain, .	123 14		
Wall, North Street, .	163 00		
Filling and grading North Street, . .	303 81		
Plumbing, . . .	6 95		
Flags, ...	5 85		
Seeds, etc., . . .	13 01		
Repairs, . . .	28 90		
Maps, books, etc., .	4 40		
Miscellaneous, . .	22 10		
		3,952 61	
Stony Brook Reservation: —			
Land, ...	$25,293 27		
Labor, ...	4,059 47		
Police, . . .	1,043 75		
Engineering, . .	1,710 59		
Legal, ...	2,970 82		
Landscape Architects, fees, . . .	350 00		
Landscape Architects, expenses, . .	43 78		
Travelling expenses, .	75 85		
Keep of horses, . .	95 97		
Tools, materials, etc., .	337 64		
Lumber, drain pipe, etc., ...	153 67		
Alterations in stable and carriage house,	449 65		
Dynamite house, .	31 33		
Fire wagon, . .	125 00		
Carriages, . . .	90 00		
Harnesses, etc., . .	66 00		
Stone drag, . .	8 00		
Signal poles, . .	22 12		
Am'ts carried forward,	$36,926 91	$204,373 74	$4,412,987 08

Am'ts brought forward,	$36,926 91	$204,373 74	$4,412,987 08
Signal flags, . .	24 60		
Paints, . . .	12 15		
Water rates, . .	27 00		
Maps, books, etc., .	66 91		
Repairs, . . .	110 52		
Miscellaneous, . .	115 56		
		37,283 65	
Revere Beach Reservation: —			
Land, ...	$518,694 88		
Labor, . . .	1,378 69		
Bath-house and shelters, . . .	118,204 16		
Walks in subways, .	95 42		
Fixtures and furnishings, . . .	27,416 22		
Electric wiring, etc., .	8,184 86		
Electrical engineering fees, . . .	1,142 10		
Construction, . .	69,382 58		
Bath-house maintenance, . . .	8,901 25		
Electric light poles, .	2,400 00		
Lighting driveway, .	351 28		
Police, . . .	6,202 80		
Engineering, . .	6,912 03		
Legal, ...	7,617 86		
Landscape Architects, fees, . . .	1,500 00		
Landscape Architects, expenses, . .	90 59		
Settlement of claims, .	465 00		
Canvas shelters, . .	416 50		
Filling at Revere Street, . . .	205 25		
Experts' fees on bathing suits, . . .	152 10		
Travelling expenses, .	117 20		
Telephones, . .	111 50		
Refuse barrels, . .	106 10		
Keep of horses, . .	147 10		
Tools, materials, etc.,	36 95		
Lighting office and station, . . .	130 25		
Improvements in sanitary, . . .	139 13		
Am'ts carried forward,	$780,501 80	$241,657 39	$4,412,987 08

Am'ts brought forward,	$780,501 80	$241,657 39	$4,412,987 08
Lumber, etc., . .	107 76		
Advertising for proposals, . . .	144 13		
Tests for wells, . .	85 88		
Sewer from house to Shirley Avenue, .	46 00		
Horse, . . .	75 00		
Cart, ...	85 00		
Harnesses, etc., . .	52 88		
Dories, . . .	66 60		
Fences, . . .	119 88		
Safe for office, . .	25 00		
Bound stones, . .	30 75		
Water rates, . .	73 66		
Testing engine, boiler and machinery, .	40 00		
Ice coolers and stands,	14 00		
Flag, ...	8 00		
Paints, . . .	10 18		
Maps, etc., . . .	4 45		
Repairs, . . .	97 90		
Miscellaneous, . .	303 19		
		781,892 06	
West Roxbury Parkway: —			
Land, ...	$4,953 00		
Legal, ...	640 00		
Landscape Architects, fees, . . .	50 00		
		5,643 00	
Hemlock Gorge Reservation: —			
Land, ...	$18,700 00		
Labor, ...	943 15		
Police, ...	101 29		
Engineering, . .	145 57		
Legal, ...	9 06		
Landscape Architects, fees, . . .	100 00		
Landscape Architects, expenses, . .	65		
Travelling expenses, .	31 95		
Alterations, superintendent's house, .	1,165 00		
Grading, . . .	870 00		
Repairs on shelter, .	281 34		
Am'ts carried forward,	$22,348 01	$1,029,192 45	$4,412,987 08

Am'ts brought forward,	$22,348 01	$1,029,192 45	$4,412,987 08
Fencing, . . .	14 31		
Putting in drain, .	25 00		
Lumber, . . .	17 77		
Repairs, . . .	21 50		
Water rates, . .	15 55		
Refuse barrels, . .	18 10		
Paints, etc., . . .	24 95		
Tools, materials, etc.,	15 30		
Maps, books, etc., .	4 40		
Miscellaneous, . .	14 40		
		22,519 29	
King's Beach Reservation: —			
Land, ...	$12,717 79		
Legal, ...	11 54		
Engineering, . .	18 21		
		12,747 54	
General Expense: —			
Legal, . . .	$117 27		
Law department, .	2,452 90		
Claim department, .	1,508 78		
Landscape Architects, fees, . . .	488 12		
Landscape Architects, expenses, . .	27 01		
Engineering department, . . .	2,020 24		
Salaries, general office, ...	4,373 33		
Rent, general office, .	991 55		
Travelling expenses, .	619 01		
Stationery and printing, ...	964 87		
Maps, plans, etc., .	766 79		
Office expenses, . .	645 90		
Mounting herbarium,	200 00		
Telephone, . . .	73 83		
Photographs, . .	97 65		
Police badges, . .	34 25		
Transferred from Series II., . . .	460 00		
Transferred from Charles River, .	52 08		
		15,893 58	
		$1,080,352 86	
Am'ts carried forward, . . .		$1,080,352 86	$4,412,987 08

Am'ts brought forward, . . .	$1,080,352 86	$4,412,987 08
Amount charged to Dec. 1, 1896, .	2,068,018 66	
Care and maintenance, July 1, 1896, to Jan, 1, 1897, ...	19,604 06	
Sinking fund requirements for 1897,	63,630 70	
	$3,231,606 28	
Amounts reserved by Auditor, . .	296,574 40	
		3,528,180 68
Balance in hands of State Treasurer, . . .		$884,806 40

Metropolitan Parks Loan, Series II., ...	$2,100,000 00
Receipts for sales, etc., ...	3,947 00
	$2,103,947 00

Expenditures.

Blue Hills Parkway: —			
Land, ...	$81,114 26		
Labor,. . . .	178 15		
Legal,. . . .	1,080 69		
Engineering, . .	944 70		
Construction, . .	6,152 97		
Landscape Architects, fees, . . .	250 00		
Appraisals,. . .	600 00		
Watering, . . .	550 00		
Clearing snow, . .	150 00		
Repairs, . . .	119 15		
Advertising, . .	79 21		
		$91,219 13	
Middlesex Fells Parkway: —			
Land, ...	$99,780 53		
Labor,. . . .	882 03		
Construction, . .	125,380 30		
Legal,. . . .	2,144 67		
Engineering, . .	5,509 28		
Landscape Architects, fees, . . .	400 00		
Landscape Architects, expenses, . .	7 08		
Police,. . . .	732 58		
Lighting, . . .	861 10		
Watering,. . . .	86 76		
Stand-pipes, . .	141 32		
Advertising proposals,	221 02		
Repairs of roads, .	279 57		
Am'ts carried forward,	$236,426 24	$91,219 13	$2,103,947 00

Am'ts brought forward,	$236,426 24	$91,219 13	$2,103,947 00
Abutments, Boston & Maine bridge, . .	153 55		
Lowering mains, .	122 30		
Seeds, ...	88 55		
Grates, etc., . .	71 50		
Maps, etc., . . .	9 60		
Lumber, . . .	6 46		
Signs, ...	45 90		
Travelling expenses, .	5 70		
Repairs, stand-pipes, .	4 99		
Miscellaneous, . .	20 25		
		236,955 04	
Mystic Valley Parkway: —			
Land, ...	$28,977 92		
Labor, ...	240 30		
Construction, . .	57,108 27		
Construction, . .	2,241 08		
Legal, ...	58 30		
Landscape Architects, fees, . . .	600 00		
Landscape Architects, expenses, . .	7 38		
Engineering, . .	4,132 90		
Police, ...	992 58		
Abbajona Bridge, .	5,949 77		
Watering, . . .	285 00		
Lighting, . . .	170 50		
Filling Parker lot, .	753 48		
Seeds, ...	169 68		
Advertising, . .	151 01		
Lumber, . . .	267 33		
Curbing, . . .	207 20		
Repairs of roads, .	137 71		
Grading, . . .	37 89		
Signs, ...	31 17		
Miscellaneous, . .	3 97		
		102,523 44	
Revere Beach Parkway: —			
Land, ...	$11,484 25		
Construction, . .	23,972 27		
Legal, ...	350 00		
Landscape Architects, expenses, . .	19 63		
Am'ts carried forward,	$35,826 15	$430,697 61	$2,103,947 00

Am'ts brought forward,	$35,826 15	$430,697 61	$2,103,947 00
Engineering, . .	2,149 96		
Electric light poles, .	180 00		
		38,156 11	
Middlesex Fells Boundary: —			
Labor, ...	$944 55		
Teams, . . .	591 98		
Construction, . .	2,206 85		
		3,743 38	
Stony Brook Roads: —			
Labor, ...	$2,100 93		
Construction, . .	1,736 21		
Engineering, . .	22 00		
Advertising, . .	101 00		
Lumber, drain pipe, etc., ...	126 93		
		4,087 07	
General Expense: —			
Legal, ...	$175 86		
Landscape Architects, expenses, . .	131 53		
Engineering, . .	5,487 02		
Law department, .	2,507 00		
Claim department, .	1,425 00		
Office expenses, . .	745 55		
Salaries, . . .	537 00		
Maps, etc., . . .	282 86		
Stationery and printing, ...	477 11		
Telephones, . .	113 50		
Travelling expenses, .	92 90		
Photographs, . .	61 74		
Miscellaneous, . .	33 85		
	$12,070 92		
Less, transferred to Series I, . . .	460 00		
	$11,610 92		
Overpaid to W. H. Mague, . . .	10 00		
		11,620 92	
		$488,305 09	
Amount charged to Dec. 1, 1896, .		311,419 97	
		$799,725 06	
Am'ts carried forward, . . .		$799,725 06	$2,103,947 00

Am'ts brought forward, . . .		$799,725 06	$2,103,947 00
Sinking fund requirements for 1897,		14,057 10	
		$813,782 16	
Amount reserved by Auditor, . .		52,171 30	
			865,953 46
Balance in hands of State Treasurer,		. . .	$1,237,993 54
Charles River Loan, ...			$300,000 00
Receipts for sales, etc., ...			2,906 61
			$302,906 61
Land	$133,164 05		
Legal, ...	5,698 76		
Landscape Architects, fees, . . .	300 00		
Landscape Architects, expenses, . .	98 50		
Engineering department, . . .	4,286 46		
Appraisals, . . .	701 00		
Filling, . . .	836 93		
Grading, . . .	116 50		
Fences, . . .	145 15		
Travelling expenses, .	23 00		
Maps, etc., . . .	13 36		
Miscellaneous, . .	3 75		
		$145,387 46	
Less amount transferred to Metropolitan Parks Loan, . . .		52 08	
		$145,335 38	
Amount expended to Dec. 1, 1896, .		150,508 76	
			295,844 14
Balance in hands of State Treasurer,		. . .	$7,062 47

METROPOLITAN PARKS LOANS.

Analysis of Payments from Jan. 1, 1897, to Dec. 31, 1897, prepared in State Auditor's Office.

Series I.

Blue Hills Reservation.			
Blacksmithing,	$140 34		
Cement,	31 94		
Carpenter work,	127 22		
Cleansing clothing,	21 00		
Carriage hire,	27 70		
Dynamite,	88 40		
Experts,	365 00		
Express,	20 15		
Fire extinguishers,	202 50		
Felt,	8 25		
Hardware,	166 35		
Harnesses,	55 38		
Hay, oats, etc.,	602 86		
Horse hire,	1,037 21		
Labor,	10,383 35		
Lumber,	379 46		
Life buoys,	9 75		
Mangers,	20 35		
Mounting plans,	1 00		
Oil,	25 38		
Paint,	2 15		
Plumbing,	35 28		
Police,	3,542 63		
Police belts,	6 15		
Piping,	216 27		
Physician's services,	10 00		
Repairing pump,	6 49		
Repairing wagon,	50 69		
Robe,	25 00		
Road-roller,	75 00		
Sharpening tools,	420 00		
Stringing wire,	27 50		
Telephone,	168 35		
Telephone system,	103 97		
Travelling expenses,	116 05		
Watering trough,	40 00		
Wagons,	216 80		
Window shades,	2 95		
F. L. & J. C. Olmsted,	3 60		
Amount carried forward,	$18,782 47		

Analysis of Payments, etc. — Continued.

Amount brought forward,	$18,782 47	
Olmsted, Olmsted & Eliot,	12 89	
Patrick O'Hearn,	2,000 00	
Charles F. Richardson, services,	19 10	
Andrews, Jaques & Rantoul,	200 00	
Land: —		
Margaret F. Forsythe,	150 00	
Thomas E. Fernald,	200 00	
Charles F. Hall,	225 00	
Henry P. Kendall,	318 00	
Mary E Lewin,	21,291 00	
Town of Milton,	10 80	
Margaret E. Reed, guardian,	1,167 50	
Nathaniel Safford,	400 00	
John W. Shapleigh, attorney,	1,991 70	
Helen M. Tolman, executor,	750 00	
Augusta E. Talbot *et al.*,	119 00	
Edward D. Wadsworth,	50 00	
Total,		$47,687 46
King's Beach Reservation.		
Prescott F. Hall, services,	$57 28	
Land: —		
John W. Chapman, executor,	450 26	
Edward S. Foster, attorney,	1,000 00	
Mary A. Green,	1,124 49	
Hannah B. Hadley, mortgagee,	450 25	
Mary S. Horton,	563 00	
Marblehead Savings Bank,	5,146 50	
John J. Merrill,	3,762 83	
A. Frank Nesbitt,	449 80	
Hurlburt McCarthy, attorney,	1,204 00	
Amos Phillips,	337 33	
Rebecca B. Seger, executor,	337 33	
Town of Swampscott,	96 00	
Total,		14,979 07
Middlesex Fells Reservation.		
Field glasses,	$13 50	
Revolvers, etc.,	35 85	
Coleman Bros.,	606 05	
Lime,	2 20	
Rent,	12 00	
Fence,	63 10	
Repairs on "Mollie" Spring,	82 10	
Hats,	6 75	
Grass seed, etc.,	40 23	
A. W. Bryne Construction Company,	980 60	
Belts,	10 15	
Blacksmithing,	57 90	
Board of horse,	73 58	
Carriage hire,	89 00	
Carpenter work,	456 00	
Cement,	13 98	
Amounts carried forward,	$2,542 99	$62,666 53

Analysis of Payments, etc.— Continued.

Amounts brought forward,	$2,542 99	$62,666 53
Clothing,	228 00	
Coal,	12 50	
Dynamite,	112 25	
Bicycles and fittings,	165 33	
Experts,	6,745 05	
Express,	29 45	
Harnesses,	289 44	
Horses,	600 00	
Horse hire,	2,897 49	
Hay, oats, etc.,	364 29	
Hardware,	648 29	
Ice,	5 25	
Labor,	12,109 30	
Lawyers' services,	58 90	
Lumber,	724 69	
Iron work, etc.,	122 34	
Oil,	54 71	
Paint,	239 51	
Pitch, etc.,	8 95	
Police,	2,920 50	
Repairs,	555 16	
Roller,	11 12	
Door and posts,	40 50	
Stenographer,	522 00	
Sharpening tools,	217 05	
Sleigh,	70 00	
Stakes,	17 50	
Sponge, etc ,	24 90	
Telephone,	139 80	
Telephone system,	209 63	
Travelling expenses,	133 13	
Masons' labor,	56 00	
Veterinary's services,	97 00	
Wagon,	150 00	
Wagon repairs,	44 05	
Wall paper,	143 70	
Water,	19 58	
Window shades,	30 25	
Gutters,	23 51	
W. H. Pierce, services,	20 00	
Stephen S. Bartlett,	72 50	
F. E. Chandler,	957 51	
Olmsted, Olmsted & Eliot,	24 14	
F. L. & J. C. Olmsted,	1 93	
Repairing clothing,	15 50	
Land: —		
Chas. A. Armstrong,	31 00	
Sarah A. Bacon,	4,400 00	
Carrie Butler,	450 00	
Grace I. Butterfield,	950 00	
Mary A. Bennett,	45 00	
Richard Dexter,	19,648 46	
Samuel S. Dexter,	19,648 45	
Mary W. Farmer,	200 00	
Wm. B. French,	7,400 00	
Amounts carried forward,	$87,248 60	$62,666 53

Analysis of Payments, etc. — Continued

Amounts brought forward,	$87,248 60	$62,666 53
Herbert J. Harwood, administrator,	300 00	
Andrew A. Lamont,	31 00	
Samuel C. Lawrence,	14,011 66	
Tobias Libby,	4,525 00	
Geo. W. Lord,	11,500 00	
City of Medford,	1 95	
John O'Brien,	81 30	
Jas. H. Page, trustee,	4,500 00	
Alice A. Pickering,	62 00	
Wm. A. Sargent,	975 00	
A. Cutter Sibley,	750 00	
Chas. T. Symmes,	50 00	
John O. Teele, attorney,	23,816 35	
Isaac J. Tisdale,	27 35	
Ellen L. Wellington,	4,000 00	
Ezra B. Whittier,	100 00	
Total,		151,980 21
Beaver Brook Reservation.		
Printers' ink,	$24 44	
Blacksmithing,	33 10	
Experts,	178 00	
Corn, meal and oats,	68 88	
Cold tar,	4 85	
Drinking fountain,	20 25	
Gravel,	219 17	
Hardware,	22 62	
Harnesses,	46 05	
Hay, oats, etc.,	38 30	
Horses,	76 25	
Lawn dressing,	10 70	
Labor,	1,363 10	
Lumber,	4 20	
Oil,	9 60	
Plumbing,	6 95	
Piping,	123 14	
Paint,	1 60	
Repairing flag,	5 85	
Repairing wall,	13 00	
Sharpening tools,	24 46	
Seeds,	2 31	
Sand,	46 14	
Work on superintendent's house,	14 65	
Wagon,	125 00	
Use of sewer,	4 50	
Olmsted, Olmsted & Eliot,	5 65	
F. L. & J. C. Olmsted,	11 05	
Lanterns and reflectors,	23 85	
Land: —		
Horace T. Stearns *et al.*,	1,093 46	
Total,		3,621 12
Amount carried forward,		$218,267 86

Analysis of Payments, etc. — Continued.

Amount brought forward,		$218,267 86	
Stony Brook Reservation.			
Advertising,	$2 50		
Barrels,	3 00		
Blacksmithing,	32 15		
Buggy,	75 00		
Clipping horse,	3 00		
Cart,	15 00		
Carpenter work,	121 33		
Copies of map,	47 50		
Corn meal and oats,	111 58		
Dynamite,	42 20		
Experts,	2,546 00		
Express,	17 80		
Flag staffs,	46 72		
Harnesses,	110 30		
Hardware,	329 80		
Hire of horses,	685 83		
Hire of sleigh,	20 00		
Ice,	5 00		
Labor,	3,917 00		
Lumber,	306 23		
Meal,	1 20		
Oil,	7 10		
Mounting prints,	3 36		
Piping,	13 65		
Plans,	10 00		
Painting,	85 17		
Plumbing,	20 74		
Picture frames,	9 40		
Police,	1,103 00		
Police belt and club,	4 15		
Printing,	3 25		
Repairs,	91 19		
Sharpening tools,	39 61		
Stable and fittings,	312 35		
Stakes,	23 50		
Stationery,	3 10		
Stone drag,	8 00		
Wagon,	125 00		
Travelling expenses,	137 30		
Water,	27 00		
Work on bridge,	13 06		
Olmsted, Olmsted & Eliot,	39 30		
F. L. & J. C. Olmsted,	4 48		
Prescott F. Hall,	2 00		
Arthur F. Gray, architect,	168 00		
W. E. Harmon, services,	550 00		
J. H. Burt & Co.,	2,000 00		
Land: —			
Carrie M. Cox, attorney,	600 00		
Henry P. Nawn,	10,000 00		
Geo. H. Poor,	350 00		
James H. Stark *et al.*, trustees,	853 95		
Chas. E. Todd, administrator, *et al.*	150 02		
Chas. A. White,	2,600 00		
Total,		27,796 82	
Amount carried forward,		$246,064 68	

Analysis of Payments, etc. — Continued.

Amount brought forward,		$246,064 68	
Revere Beach Reservation.			
Advertising,	$144 13		
Blankets, etc.,	16 00		
Brooms, baskets, etc.,	34 25		
Board of horse,	163 47		
Brass checks,	7 00		
Building sewer,	46 00		
Blacksmithing,	6 55		
Building fence,	97 00		
Carpenter work,	134 38		
Carriage hire,	134 00		
Cot bed,	3 00		
Carpet,	10 00		
Cart,	85 00		
Cotton cloth,	5 40		
Cleaning clothes,	32 50		
Coal,	116 31		
Catch-basins,	256 50		
Dory,	16 60		
Deputy sheriff's services,	81 27		
Electric wiring,	17 60		
Electric lights,	408 31		
Experts,	8,111 95		
Express,	15 45		
Flag,	8 00		
Frames and grates,	335 86		
Furniture,	36 00		
Glass ware,	10 25		
Hardware,	206 17		
Harness,	40 00		
Horse,	75 00		
Horse hire,	107 75		
Ice,	10 80		
Iron castings,	406 64		
Labor,	1,455 07		
Ladder,	1 45		
Lamps,	3 80		
Lumber,	71 93		
Matches,	1 15		
Medical attendance,	2 00		
Oil,	28 60		
Posts,	30 75		
Painting,	44 86		
Photographs,	205 50		
Piping,	11 82		
Plumbing,	52 26		
Plants,	10 00		
Police,	6,620 44		
Poles,	1,200 00		
Recording deeds,	2 15		
Revolvers, etc.,	27 47		
Refuse barrels,	124 20		
Sign boards,	7 50		
Sheriff's services,	14 80		
Shelters,	64 00		
Stakes,	117 25		
Amounts carried forward,	$21,276 14	$246,064 68	

Analysis of Payments, etc. — Continued.

Amounts brought forward,	$21,276 14	$246,064 68	
Stationery,	20 45		
Steps,	15 00		
Safe,	25 00		
Sand,	205 25		
Telephones,	271 67		
Travelling expenses,	243 45		
Teaming,	113 55		
Watering roads,	83 50		
Water,	73 66		
Boston Electric Insulated Pole Company,	1,200 00		
Boston, Revere Beach & Lynn Railroad Company,	194,384 84		
Stephen S. Bartlett,	82 72		
Frank E. Bradish,	280 00		
T. Costello & Company,	127 31		
Charles Henry Davis,	685 35		
Wm. H. Graham,	148 50		
Murdock Parlor Grate Co.,	11,805 90		
John J. O'Brien & Co.,	74,917 98		
Chas. M. Draper,	11 45		
Olmsted, Olmsted & Eliot,	1,577 65		
F. L. & J. C. Olmsted,	12 94		
Stephen A. Green,	129 00		
John S. Potter,	7,277 74		
Ernest W. Roberts, attorney,	950 00		
John Soley,	870 00		
Chas. F. Richardson,	9 63		
Stickney & Austin,	4,451 00		
T. Stuart & Son,	2,958 67		
E. K. Turner, services,	1,550 00		
W. T. Pierce, expenses,	14 14		
T. F. Reddy,	593 05		
Wm. T. Eaton,	118,299 58		
Doctors' services,	71 00		
Awnings,	103 05		
Attendants,	25 90		
Bathing suits,	7,124 81		
Badges,	26 50		
Bass wood frames,	105 50		
Brass checks,	52 00		
Bicycle hangers,	133 33		
Electric lights,	1,676 34		
Cash registers,	384 20		
Disinfectant,	50 00		
Dory,	50 00		
Duck coverings,	190 95		
Dry goods,	165 08		
Flags,	25 75		
Frames, etc.,	59 50		
Furniture,	187 80		
Hardware,	12 55		
Hair brushes, etc.,	20 00		
Ice,	14 10		
Lunch at opening of bath-house,	112 00		
Lunches,	108 65		
Amounts carried forward,	$455,364 13	$246,064 68	

Analysis of Payments, etc. — Continued.

Amounts brought forward,	$455,364 13	$246,064 68
Water coolers,	14 00	
Coal,	147 78	
Labor,	5,510 10	
Looking-glasses,	138 78	
Mats,	44 00	
Medicines,	114 35	
Money bags,	9 00	
Moving two rafts,	15 00	
Iron piping,	94 28	
Inspection of boiler,	2 00	
Rubber rings,	50 64	
Rubber clothing,	10 50	
Rafts and shelter,	284 79	
Globes,	75 00	
Foot pump,	2 00	
Stringing keys,	3 00	
Soap,	14 52	
Safe,	200 00	
Service boxes,	3 90	
Stationery,	173 67	
Sponges,	3 43	
Storm doors,	110 75	
Tickets and cases,	157 60	
Fire extinguishers,	97 65	
Plumbing,	3 30	
Use of boat,	1 05	
Uniforms,	242 88	
Wire railing,	101 00	
Wringers,	20 00	
Watchmen,	246 70	
Stickney & Austin,	2,433 21	
B. F. Smith & Bro ,	2,500 00	
W. H. Young, expert examiner,	50 00	
Empire Laundry Machinery Company,	9,004 07	
Land: —		
John B. Aiken,	3,557 83	
Hollis R. Bailey, attorney,	10,275 10	
Hollis R. Bailey,	2,760 78	
Marianna Bacigalupo,	2,645 00	
Washington G. Benedict,	1,587 02	
Colby Bartlett,	750 00	
John Cazale,	4,600 00	
James W. Broadbine,	7,500 00	
John Broadbine,	7,500 00	
Boston Revere Beach & Lynn Railroad Company,	62,000 00	
Boston Land Company,	1,340 00	
Mary J. Brown,	3,228 00	
Jos. B. V. Coburn,	8,300 00	
Jos. B. V. Coburn, attorney,	4,200 00	
Chresten Chrestensen,	425 00	
Margaret E. Day,	3,992 00	
Mary L. Dolan,	1,116 00	
Anna J. Derrington,	2,450 00	
Amounts carried forward,	$605,469 81	$246,064 68

Analysis of Payments, etc. — Continued.

Amounts brought forward,	$605,469 81	$246,064 68	
Anna J. Derrington, guardian,	800 00		
Geo. W. Fifield, administrator,	31,706 31		
Michael Flanagan,	394 26		
John L. Gilman,	1,500 00		
Arad Gerry,	812 00		
Fred W. Hatch,	200 00		
Caroline M. Hathaway,	3,988 00		
Nathaniel H. Hayford,	50 00		
Lawrence W. Kane,	475 00		
Lynn and Boston Railway Company,	8,800 00		
Mary L. Kane,	325 00		
Geo. S. Lee, trustee,	3,168 05		
Jacob M. Lewis, administrator,	942 83		
Francis G. Lynde,	447 39		
Robt. W. Light, attorney,	769 91		
Margaret T. McGinniss,	75 00		
Geo. E. Merrill,	625 00		
Arthur D. McClellan,	16,170 99		
Luigi Nicolini,	3,000 00		
Oak Island Grove Company,	9,000 00		
Sarah J. O'Keefe,	8,510 56		
Jacob Pfaff,	5,500 00		
Joseph N. Pastine, attorney,	4,000 00		
Town of Revere,	635 64		
Arnold A Rand,	1,000 00		
Wm. G. Reed,	3,766 58		
Alex. Rose,	895 00		
Noah Seaman,	9,675 00		
Geo. N. Seeley,	312 00		
Marianne B. Shute,	357 00		
Ezra M. Smith,	1,955 00		
Ezra M. Smith, attorney,	1,955 00		
John F. Simmons, attorney,	902 84		
Jas. F. Sweeney,	19,229 07		
Geo. C. Coit, attorney,	500 00		
John Cazale,	2,000 00		
Angelo Casassa,	3,000 00		
Robt. W. Light, attorney,	850 00		
John McMahon,	2,300 00		
John L. Gilman,	800 00		
Geo. W. Fifield,	2,000 00		
John Prentiss, attorney,	1,750 00		
John F. Simmons, attorney,	500 00		
Charles R. Stratton,	150 00		
Total,		761,263 24	
West Roxbury Parkway.			
Experts,	$290 00		
Land: —			
Francis Supple,	4,339 30		
Total,		4,629 30	
Amount carried forward,		$1,011,957 22	

Analysis of Payments, etc. — Continued.

Amount brought forward,		$1,011,957 22
Hemlock Gorge Reservation.		
Carpenter work,	$8 96	
Drain,	25 00	
Experts,	862 55	
Hardware,	15 30	
Horse hire,	34 05	
Iron posts,	5 35	
Labor,	897 90	
Lanterns and reflectors,	7 95	
Lumber,	28 83	
Loam,	9 40	
Maps,	6 75	
Paint,	11 15	
Painting,	119 05	
Police hats,	27 35	
Police,	75 75	
Padlocks,	5 75	
Range,	40 00	
Revolvers and clubs,	155 69	
Stationery,	6 70	
Registering deeds,	2 79	
Signs,	2 50	
Travelling expenses,	27 75	
Uniforms,	383 17	
Vines,	3 75	
Water,	12 00	
Water-closets,	74 11	
Water meter,	2 50	
Repairing uniforms,	10 00	
Walter Chesley,	670 00	
Daniel Hurley,	326 00	
Olmsted, Olmsted & Eliot,	1,650 00	
F. L. & J. C. Olmsted,	65	
Wm. T. Pierce, expenses,	132 39	
Land: —		
Philip Gokey,	600 00	
Paul N. Goodrich,	600 00	
Second Baptist Church, Newton,	1,500 00	
Bentley W. Warren, attorney,	16,000 00	
Total,		24,341 09
John Woodbury,	$3,666 66	
Mary V. Habberley,	783 33	
Alice Edson,	660 00	
Alice G. Kelley,	300 00	
Mary C. Godvin,	240 00	
Herbert A. Hall,	90 00	
H. M. Carey,	60 00	
Louis A. Frothingham, legal service,	401 40	
Frederic S. Goodwin, services,	1,750 00	
Frederic S. Goodwin, expenses,	374 50	
Stephen S. Bartlett,	78 94	
Olmsted, Olmsted & Eliot,	492 92	
Prescott F. Hall,	22 92	
Amounts carried forward,	$8,920 67	$1,036,298 31

Analysis of Payments, etc. — Continued.

Amounts brought forward,	$8,920 67	$1,036,298 31	
Wm. T. Pierce,	104 49		
Geo. L. Rogers,	900 00		
F. L. & J. C. Olmsted,	22 21		
Atlases,	53 55		
Books,	26 50		
Badges,	34 25		
Blueprints,	582 35		
Bag,	3 25		
Carriage hire,	42 00		
Directory,	5 50		
Dinners,	203 25		
Drawing material,	285 21		
Dusters	1 25		
Electric lighting,	36 78		
Experts,	822 84		
Express, etc.,	15 94		
Furniture,	143 75		
Ice,	15 50		
Janitor,	115 00		
Hardware,	34 90		
Labor,	8,402 83		
Levels,	1 75		
Lumber,	22 40		
Lunches,	7 70		
Lamps,	8 50		
Mounting plans,	35 49		
Map,	35 00		
Mounting plants,	200 00		
Painting,	4 09		
Photographs,	185 40		
Plans,	6 00		
Postage,	252 00		
Printing,	753 52		
Plumb-bobs,	50 40		
Removing awnings,	7 50		
Rent of rooms,	2,156 19		
Repairing transits,	5 95		
Scales,	35 80		
Spring water,	4 00		
Signs,	3 00		
Stakes,	35 80		
Stationery,	379 99		
Stenographer,	140 00		
Transits, etc.,	432 00		
Telephone,	206 53		
Towel supply,	30 20		
Travelling expenses,	574 12		
Typewriter supplies,	22 03		
Uniforms,	281 78		
Total,		26,649 16	
Total expenditures in Series I.,			$1,062,947 47

Analysis of Payments, etc. — Continued.

SERIES II.

Blue Hills Parkway.			
Stakes,	$10 75		
Frames and grates,	61 49		
Photographs,	14 00		
Furniture,	8 75		
Portable office,	90 00		
Advertising,	79 21		
Carriage hire,	8 50		
Clearing off snow,	150 00		
Catch-basin grates,	5 05		
Experts,	494 82		
Stove & piping,	13 20		
Labor,	177 15		
Lumber,	35 86		
Trimming trees,	1 00		
Stone,	70 98		
Travelling expenses,	16 00		
James M. Newell, services,	186 20		
Chas. F. Richardson, services,	118 12		
Paint,	2 65		
F. X. Saucier,	7,743 65		
Watering streets,	550 00		
Town of Milton,	1,520 00		
Land: —			
Jonathan B. L. Bartlett,	1,425 00		
Richard C. Bayldone,	876 00		
Jonathan B. L. Bartlett, attorney,	50 00		
Lydia M. Corliss, executrix,	2,411 00		
Wm. J. Coveney,	874 00		
Jos. R Churchill, attorney,	7,303 75		
Timothy F. Clary,	9,308 51		
Wm. Endicott, 3d, *et al.*,	2,818 00		
Henry P. Kendall, trustee,	467 00		
Annie L. Lamb,	9,326 00		
Horatio A. Lamb,	4,100 00		
Dollie S. Look,	993 00		
Chas. H. Snow,	601 00		
Maurice A. Daly,	554 00		
Henry L. Marcy,	624 00		
Henry L. Marcy, trustee,	250 00		
Stephen A. Meagher,	515 78		
James F. Pope,	6,181 00		
Florence M Lyons,	11 00		
Nathaniel M. Safford,	1,679 00		
Georgianna Pressey,	425 00		
Albert K Teele,	1,162 74		
Cornelia C. Teele,	461 48		
John A. Tucker,	1,618 00		
Thos. F. Temple *et al.*,	16 00		
Tileston & Hollingsworth Company,	13,739 00		
True T. Townsend,	729 00		
Alice C. Tucker,	649 00		
Rose Hollingsworth, attorney,	4,828 00		
H. Alonzo Jefferson,	645 00		
Jonathan B. L. Bartlett, attorney,	361 00		
Harry D. Capen,	660 00		
Amount carried forward,	$87,019 64		

Analysis of Payments, etc. — Continued.

Amount brought forward,	$87,019 64	
John A. Meagher,	580 42	
Hyde Park Savings Bank,	3,591 58	
W. Newton Harlow,	425 00	
Wm. E. Webb,	405 00	
Frank W. Johnson, attorney,	450 00	
Total,		$92,471 64
Middlesex Fells Parkway.		
Blueprints,	141 71	
Advertising,	221 02	
Building abutments,	19 66	
Carriage hire,	13 50	
Changing blow-off,	7 41	
Electric lights,	861 10	
Experts,	814 95	
Catch basins,	45 00	
Frames and grates,	267 00	
Furniture,	5 60	
Grass seed,	88 55	
City of Medford,	2,000 00	
City of Somerville,	2,000 00	
Hardware,	2 47	
Hire of horses,	441 02	
Iron work,	789 27	
Labor,	1,242 85	
Locating standpipes,	141 32	
Lowering street,	122 30	
Lumber,	6 46	
Photographs,	26 00	
Piping,	39 80	
Police,	799 50	
Mounting plans,	1 60	
Sharpening tools,	10 50	
Michael Tallent & Co.,	2,353 07	
Signs,	10 00	
Stakes,	140 35	
Stone,	5 00	
Stove and pipe,	10 95	
Travelling expenses,	268 95	
Use of steam roller,	17 50	
Watering roads,	74 76	
Stephen S. Bartlett,	612 67	
D. W. Chase,	311 77	
Coleman Bros.,	63,364 41	
Jos. D. Gennaro,	52,345 74	
Thos. Quigley,	552 00	
Boston & Maine Railroad, building abutments,	8,338 90	
Thos. H. O'Connell,	330 50	
Edw. L. Rand,	345 00	
Barbour, Stockwell & Co.,	137 19	
Chas. F. Richardson,	80 33	
Boston Bridge Works,	2,085 00	
F. X Saucier,	2,985 57	
Olmsted, Olmsted & Eliot,	250 00	
Amounts carried forward,	$144,728 25	$92,471 64

Analysis of Payments, etc. — Continued.

Amounts brought forward,	$144,728 25	$92,471 64
F. L. & J. C. Olmsted, . . .	62 88	
McCusker Bros., ...	1,216 35	
Land: —		
Benj. F. Brownell *et al.*, . .	2,000 00	
Oliver Ames *et al.*, trustees, . .	12,102 65	
John G. Chandler, attorney, . .	579 83	
Job H. Cressey, administrator, .	5,348 27	
Richard Dexter, ...	6,127 60	
Sam'l G. Dexter, ...	6,127 60	
Joshua Gray, attorney, . . .	71 00	
Edward Dunn, ...	4,000 00	
John A. Fifield, ...	530 50	
Benj. F. Hayes, attorney, . .	1,105 70	
Joshua Gray, ...	49 00	
C. O. Hunter, ...	758 00	
Francena J. Gilman, . . .	7,000 00	
Dan'l Keleher, ...	1,850 00	
Jeremiah Kelleher, . . .	421 58	
Timothy J. & John J. Kelley, .	153 50	
Mary E. Kimball, ...	250 00	
City of Malden, ...	132 09	
Malden Co-operative Bank, . .	204 67	
Alice McGarry, ...	203 60	
Malden Savings Bank, . . .	5,113 54	
Jos. K. Manning, ...	503 00	
John M. Merrimac, attorney, .	850 00	
Medford Savings Bank, . .	1,405 23	
Thos. Monahan, ...	1,015 33	
Arthur Orpin, ...	2,349 00	
E. R. Price, attorney, . . .	4,852 00	
Mary F. Emery, ...	22 50	
Eugene G. Ayer, ...	7,494 44	
Franklin O. Reed, ...	979 40	
Franklin O. Reed *et al.*, . .	12,102 65	
John J. Scott, ...	1,300 00	
Hannah F. Straw, ...	1,695 00	
John A. Sullivan, ...	507 00	
Francis A. Shove, attorney, . .	1,958 65	
Edward F. Smith, ...	71 00	
Chas. C. Talbot, ...	1,920 81	
Georgianna I. Turner, attorney, .	494 00	
Arthur H. Wellman, attorney, .	4,165 20	
Jos. H. Wiggin, attorney, . .	623 62	
Thos. C. Bachelder, attorney, .	1,350 00	
James E. Leach, attorney, . .	3,500 00	
West End Street Railway Company,	154 50	
Chas. S. Baxter, attorney, . .	5,500 00	
Georgianna W. Harris, . .	500 00	
Immaculate Conception Parochial School, trustees, . . .	1,904 90	
Total, ...		257,354 84
Mystic Valley Parkway.		
Advertising, ...	$81 03	
Curbing, ...	207 20	
Amounts carried forward, .	$288 23	$349,826 48

Analysis of Payments, etc. — Continued.

Amounts brought forward, .	$288 23	$349,826 48
Experts, ...	50 00	
Frames and grates, . . .	105 00	
Light, ...	341 00	
Grass seed, ...	327 71	
Horses, ...	10 50	
Hardware, ...	1 00	
Iron work, ...	9 50	
Labor, ...	541 90	
Lumber, ...	118 22	
Painting signs, ...	23 85	
Photographs, ...	11 88	
Police, ...	1,217 00	
Removing engineer's house, . .	19 58	
Stakes, ...	57 70	
Travelling expenses, . . .	96 30	
Use of watering cart, . . .	130 00	
Martin Gill & Son, . . .	1,898 28	
McCusker Bros., ...	28,292 27	
Olmsted, Olmsted & Eliot, . .	1,000 00	
Wm. T. Pierce, ...	47 27	
Thomas Quigley, ...	201 48	
Frank X. Saucier, ...	25,953 35	
Land: —		
Elder, Wait & Whitman, attorneys,	11,114 13	
Maria L. Johnson, ...	400 00	
Wm. B. French, attorney, . .	2,023 54	
Total, ...		74,279 69
Revere Beach Parkway.		
Labor, ...	$24 00	
Revolvers, ...	23 66	
Travelling expenses, . . .	32 50	
Stakes, ...	6 75	
Boston Bridge Works, . . .	3,500 00	
John J. O'Brien & Co., . . .	26,708 65	
Boston Electric Insulated Pole Company, ...	1,126 00	
Wm. T. Pierce, ...	52 09	
Lynn & Boston Railroad Company,	2,300 00	
Thomas F. Reddy, ...	350 00	
Prescott F. Hall, ...	24 95	
C F. Richardson, ...	8 93	
John S. Potter, ...	907 12	
Land: —		
Chresten Chrestensen, . . .	25 00	
Boston Land Company, . .	1,339 70	
Washington G. Benedict, . .	3,126 80	
Geo. S. Lee, ...	3,126 80	
Total, ...		42,682 95
Stony Brook Roads.		
Advertising, ...	$101 00	
Experts	196 48	
Hire of horses, ...	231 98	
Amounts carried forward, .	$529 46	$466,789 12

Analysis of Payments, etc. — Continued.

Amounts brought forward,	$529 46	$466,789 12
Labor,	1,587 90	
Lumber,	70 24	
Piping,	16 89	
Stakes,	22 00	
Tools,	6 55	
Owen Cunningham & Sons,	2,961 83	
Wm. T Pierce,	107 83	
Total,		5,302 70
Neponset River Parkway.		
Exports,	$25 00	
Prescott F. Hall,	98 93	
Total,		123 93
Quincy Parkway.		
Plans,	$112 25	
Travelling expenses,	18 00	
Total,		130 25
Atlases,	$40 00	
Blueprints,	115 77	
Carriage hire,	44 50	
Correcting maps,	115 80	
Cases,	99 00	
Dinners,	50 40	
Drawing materials,	229 50	
Electric wiring,	20 00	
Electric lights,	27 93	
Exchange of typewriters,	31 75	
Experts,	414 94	
Furniture,	139 12	
Glassware,	4 86	
Hardware,	133 62	
Horse hire,	10 00	
Labor,	14,580 12	
Janitor,	115 00	
Mounting plans,	29 02	
Prescott F. Hall, services,	18 94	
Postage,	38 00	
Printing,	471 55	
Photographs,	61 74	
Recording deeds,	20 93	
Rent of rooms,	1,833 35	
Repairing instruments,	126 00	
Tapes,	169 00	
Stakes,	70 00	
Stationery,	202 91	
Stove,	20 00	
Teaming, express, etc.,	30 50	
Telephones,	191 50	
Towel supply,	42 10	
Travelling expenses,	274 82	
Transits, etc.,	958 75	
Window shades,	7 83	
Amounts carried forward,	$20,739 25	$472,346 00

Analysis of Payments, etc. — Continued.

Amounts brought forward,	$20,739 25	$472,346 00	
Louis A. Frothingham, service,	401 00		
Frederic S. Goodwin, services and expenses,	1,870 00		
Mary C. Godvin,	230 00		
Alice G. Kelley,	350 00		
Geo. L. Rogers,	800 00		
H. A. Hall,	45 00		
H. M. Carey,	57 00		
Olmsted, Olmsted & Eliot,	96 18		
Wm. T. Pierce, expenses,	156 03		
Total,		24,744 46	
Total expenditures in Series II.,			$497,090 46

Charles River Loan.

Advertising,	$160 37		
Boundary stone,	3 75		
Carpenter work,	59 45		
Carriage hire,	143 50		
Cloth backing,	6 16		
Experts,	7,257 25		
Labor,	4,812 42		
Lumber,	85 70		
Mounting plans,	5 28		
Dinners,	8 00		
Plans,	6 20		
Photographs,	46 00		
Rod,	9 00		
Repairs,	5 60		
Stakes,	38 25		
Sheriff's services,	26 34		
Travelling expenses,	214 00		
Use of boat,	6 00		
Water,	17 33		
Thos. F. Reddy,	3 45		
F. L. & J. C. Olmsted,	21 84		
S. S. Bartlett,	61 80		
Prescott F. Hall,	19 51		
Jas. M. Newell,	240 00		
Olmsted, Olmsted & Eliot,	376 66		
Wm. T. Pierce, expenses,	167 22		
Land: —			
Balch & Rackemann, attorneys,	10,771 25		
John W. and Lucy C. Bemis, trustees,	6,300 00		
Dan'l N. Chamberlin,	120 00		
Dan'l N. Chamberlin *et al.*,	150 00		
Herbert Coolidge, trustee,	10,600 00		
Amount carried forward,	$41,742 33		

Analysis of Payments, etc. — Concluded.

Amount brought forward,	$41,742 33		
Henry Endicott,	75 00		
Margaret A. Elliot,	250 00		
Irving B. Frost,	351 75		
Granville A. Fuller,	2,500 00		
Jas. A. Hathaway,	25,000 00		
Theophilus King, trustee, *et al*,	25,400 00		
Albert T. Lincoln, Jr., attorney,	3,992 38		
Oliver W. Livermore *et al.*,	6,000 00		
Harry W. Mason,	3,041 16		
City of Newton,	946 27		
Benj. S Priest, attorney,	14,000 00		
Jas. H. Stark *et al.*,	446 05		
Edward L. Wood,	70 19		
Ida Wheelock,	348 75		
Chas. F. Kittredge, attorney,	4,521 52		
Total,		$128,685 40	
Total expenditures in Charles River Loan,			$128,685 40

APPENDIX.

REPORT OF CHARLES ELIOT,

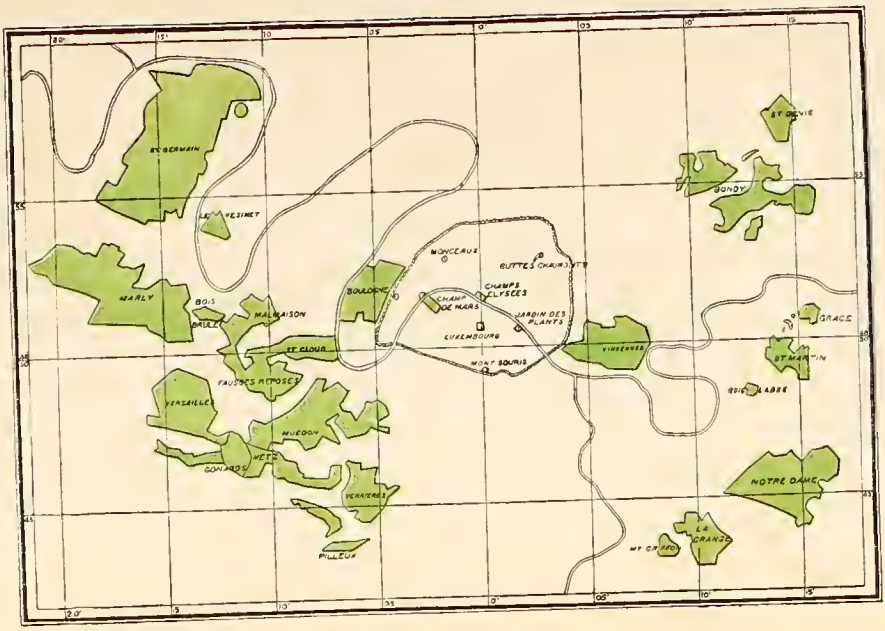
LANDSCAPE ARCHITECT,

TO THE

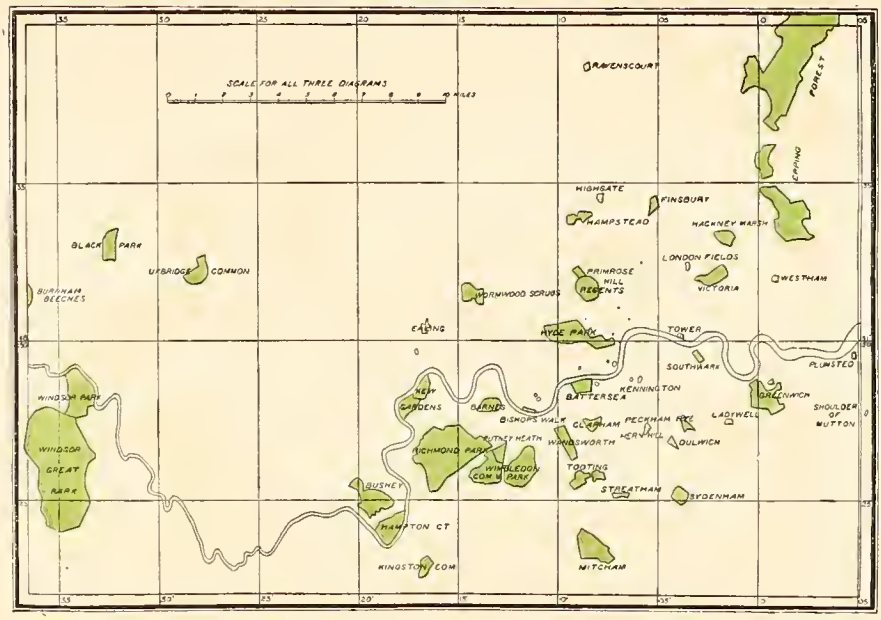
METROPOLITAN PARK COMMISSION OF 1893.

[REPRINTED, WITHOUT THE ILLUSTRATIONS, FROM THE REPORT OF 1893.]

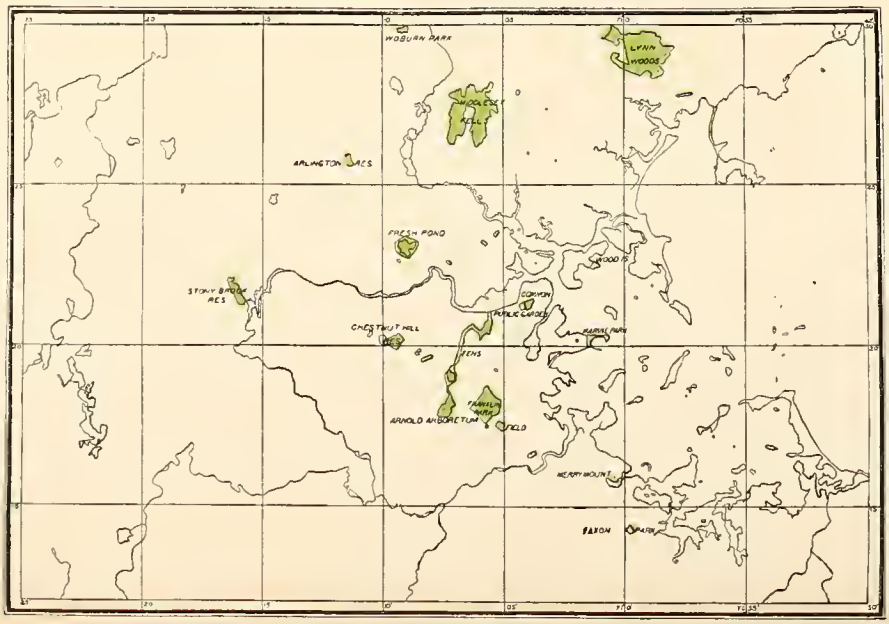
PARIS.



LONDON.



BOSTON.



The open spaces of Paris, London and Boston, drawn to the same scale.

REPORT OF CHARLES ELIOT,
Landscape Architect.

[Reprinted, without the illustrations, from the Report of 1893.]

To the Metropolitan Park Commission.

Gentlemen: — You have asked me to report to you upon the opportunities presented by the neighborhood of Boston for the creation of such public open spaces as may best promote the health and happiness of the inhabitants of the metropolitan district. I have given my best attention to the problem, and now beg leave to submit the following paper, asking you to excuse its manifest shortcomings, in view of the great breadth of the field it essays to cover.

INTRODUCTION.

The life history of humanity has proved nothing more clearly than that crowded populations, if they would live in health and happiness, must have space for air, for light, for exercise, for rest, and for the enjoyment of that peaceful beauty of nature which, because it is the opposite of the noisy ugliness of towns, is so wonderfully refreshing to the tired souls of townspeople.

Most of the greatest centres of the population of the world have now accepted the teachings of bitter experience, and have provided themselves with the necessary and desirable open areas, albeit at immense expense and with great difficulty. The accompanying diagrams show the extent of the public open spaces now existing in the neighborhood of Paris and of London, in comparison with those now existing near Boston. "Experience keeps a dear school, but fools will learn in no other," said Benjamin Franklin. Shall Franklin's birthplace play the fool's part? Presumably this is the question which the Metropolitan Park Commission and the people of the metropolitan district will ask the General Court to answer.

If, then, it be determined that the metropolitan district of Boston shall be wise, and shall provide itself with ample open spaces while it may yet do so at small expense, upon what considerations

should the selection of lands for public open spaces be based? Obviously this question cannot be answered intelligently without a somewhat detailed study both of the natural or geographical features of the district in question, and of the manner in which crowded settlement has affected these natural features to the advantage or injury of the population concerned. When such a study shall have brought forth the facts in the case, it will be possible to deduce therefrom the considerations which should govern the scientific selection of lands for public open spaces; and it will then only remain to review the existing open spaces, and to propose new reservations in the light of the considerations so established. In other words, this report falls naturally into three parts, as follows: —

PART I. — A summary of the physical and historical geography of the metropolitan district.

PART II. — A study of the way in which the peculiar geography of the metropolitan district ought to govern the selection of the sites of public open spaces.

PART III. — A review of the opportunities which still present themselves for creating new open spaces in accordance with the governing considerations just laid down.

PART FIRST.

The Rock Foundation. — Underneath the whole region — under the sea, the rivers, the woods — lie the rocks of the crust of the earth. The oldest and hardest of these rocks, beside underlying the whole district, stand up in two conspicuous though broken ridges, — that which extends from Waltham to Cape Ann, sometimes called the Wellington Hills, and that which from the earliest settlement has borne the name of the Blue Hills. The northern mass of rock, though broken in many places by deep transverse valleys, such as those of the Mystic, Malden and Saugus rivers, generally presents to the south a steep, wall-like front, about one hundred feet in elevation. In its eastern extension its highland surface is exceedingly rough, broken into rocky knobs and narrow hollows, now and then rising into exceptionally high summits, such as Bear Hill (three hundred and twenty-five feet) in Stoneham, and Burrill's Hill (two hundred and eighty-five feet) in Lynn.*

* See illustrations Nos. 1, 5, 6, 7.

The southern rock-mass of the Blue Hills differs from the northern in that it is carved into a dozen rounded and partially separated hills, steepest on their south sides, and varying in elevation above the sea from three hundred to more than six hundred feet, being the highest hills standing thus near the coast of the continent from Maine to Mexico.*

Between these much-worn stumps or roots of ancient mountains — the Wellington Hills and the Blue Hills — lies a region some fifteen miles wide, in which the primitive rocks which form these mountain stumps have been depressed so far, and the secondary rocks which lie upon the primitive rocks have been worn down so deep, that the sea has flowed over both and formed Boston bay. Not that the waters of the bay wash against shores of rock. On the contrary, the points within this region where the sea meets the rocks are very few, the most conspicuous being the ocean fronts of Swampscott and Cohasset, Nahant, the outer islands and Squantum. Such rocks as do appear above the surface within the Boston basin are of mixed kinds; among them the various slates of Quincy, Cambridge and Somerville, and the conglomerate or pudding-stone which forms Squaw Rock at Squantum and the great bosses of ledge which protrude in spots in Roxbury and elsewhere. But generally throughout this depressed region there is no solid rock in sight. Even the rivers rarely discover any, except at their several so-called "falls." Another material, which must next be examined, forms almost all the sea-shore, the river-banks, and the dry land of the space between the massive uplifts of the Wellington and the Blue Hills.

The Glacial Rubbish. — Dumped in various sorts of heaps, alike upon the uplifted and the depressed parts of the rock foundation of the district, lies an enormous quantity of clay, gravel and stones of all sizes and kinds, — stuff which the moving ice-sheets of successive glacial periods bore away from northern regions. The largest of these heaps form very conspicuous objects in the scenery of the district, being great rounded hills of symmetrical form, such as are numerous in the neighborhood of Chelsea and all about Boston harbor.† Lesser heaps take the form of steep mounds and narrow and long ridges, often enclosing bowl-like hollows from which there is only an underground escape for water. More important are the large areas in which the glacial material has been worked over by running waters in such a way as to produce

* See illustrations Nos. 20, 22, 26.

† See illustrations Nos. 10, 29, 31.

almost level plains, which, in sharp contrast to the steep hills, are almost free from bowlders of large size. It is with this material, dumped in these various forms, that the region where the ledge rocks are sunk is filled and brought above the level of the sea.

The Fresh Waters. — Upon the surfaces already described — the well-rubbed rocks and the rounded heaps of glacial wreckage — fall rain and snow, which gathers itself into streams and sets out for the sea. But the course of the waters throughout all this region is difficult and tortuous in the extreme. Turned this way and that by the accumulations of glacial stuff, the streams follow few sharply defined valleys, but wander about in an unusually aimless manner. In the highland parts of the district rain-waters are caught in rock-rimmed hollows, or in basins formed by dams of glacial drift, from which they can escape only by overflowing the rim or dam. Thus almost every hollow, even at two hundred feet above the sea, contains a pond, or a swamp which is a clogged pond, while along the courses of the brooks and rivers similar morasses appear at frequent intervals.* Even the Charles River, the largest stream of the region, suffers in its course from just these difficulties. At Dedham it is suddenly turned aside from a short route to the sea by way of the Neponset valley; and then at Newton Upper Falls the hard rock which it has there chanced to hit upon serves as a dam, which makes a great swamp of all the lowlands for several miles up stream. It need hardly be added that, however it may be with respect to healthfulness, with respect to scenery these retardations of the waters in ponds and swamps are a very valuable and charming addition to a landscape already wonderfully varied and picturesque.

The Sea. — Eastward on a clear day, from almost any of the numerous rock or gravel hill-tops of the district, is seen the distant horizon of the sea, — sometimes a long field of blue spread across the whole fifteen miles from the Roaring Bull of Marblehead to the Black Rock of Cohasset, and sometimes only a bowl-shaped patch lying between some near or distant elevations of the mainland.

The ocean rocks of Marblehead and Cohasset guard the entrance to Boston bay. Sweeping between them with an unbroken surface, the salt waters presently meet with many and various obstructions, which everywhere betray the marks of the destructive or constructive energy of the waves. The rock island of Nahant has been gnawed into by the surf until its coast is ragged and picturesque in

* See illustrations Nos. 3, 15, 16, 21, 22.

the extreme; but, in return, the sea has formed out of the waste of the land a beautiful beach, which makes a perfect causeway connecting the island with the main. One step further inland, and similar evidences of the work of the sea appear on every hand. Here the waters meet the foremost of those great hills of clay and stones which the ice age bequeathed to the present. Grover's Cliff, Winthrop Great Head,* Great Brewster Island, Point Allerton and Strawberry Hill still stand boldly in the front against the sea; although they are now but fragments of their originally symmetrical masses. From the feet of their steep bluffs, long curving beaches, built by the sea, stretch away to unite themselves with the next adjacent mounds or hills; or else to join in never-ending conflict with some strong tidal current, as at Shirley and Hull guts.

The waves as they roll inland along the converging coasts of the bay are ever bringing fresh material wherewith to close the remaining gaps and shut up the port of Boston; but the flowing and ebbing tides are fortunately as constantly at work to keep the entrance open, so that no appreciable narrowing of the passages is accomplished. Once inside Point Shirley and Point Pemberton, the now stilled waters play around numerous other hills of the kind geologists call drumlins, here cutting a steep bluff out of the side or end of one of them;† here, by building beaches, linking two or three together to form an island or a stretch of coast; or here again reaching far inland between the hills to receive the fresh waters of brooks and rivers. Finally, behind the beaches and in all the stillest parts of the tidal region, the growth of grasses on the muddy flats has resulted in the building up of wide-spread and open levels of salt marsh, in which the tidal currents are able to keep open only a few sinuous channels.‡ On the north the marshes and the salt creeks extend to the very feet of the rock highlands. Westward the salt water of Charles River reaches inland six miles from the State House. On the south the estuaries and marshes of the Neponset and of Weymouth Fore and Back rivers present beautiful pictures of mingled land and water. This flowing of the sea about the half-sunken drumlins has produced scenery which, were it not so familiar, would be considered wonderfully varied and fine.

The Effects of Human Occupancy.— Into this region of marvellously commingled waters, marshes, gravel banks and rocks

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* See illustration No. 11.

† See illustrations Nos. 28, 29.

‡ See illustrations Nos. 8, 9, 10, 25, 26, 27.

came the English colonists of the seventeenth century; and, from Miles Standish of Plymouth to Thomas Morton of Merrymount, every man among them had only praise for the scenery. To Standish, after he had landed at Squantum and voyaged up Mystic River, the region seemed "the paradise of all these parts," and he very naturally wished the Plymouth people "had there been seated." For Morton, the educated sportsman, the blue waters, the salt meadows, and the great woods which framed the coves of marsh grass with a wall of varied verdure, composed a great free hunting park the like of which all England could not boast.

The annihilation of the native red men by a plague had left the country comparatively safe, and, although the first houses of Boston were built on the peninsula of Shawmut, because of its advantages in case of attack, Governor Winthrop and the other leaders soon took up large outlying estates, while outlying settlements were also made very early. The steep drumlin hills of Shawmut, surrounded and even divided as they were by the tides, afforded but little opportunity for tillage, and compelled a scattering of the people, and when this took place it was to the most accessible of the few smooth parts of the neighborhood that they went. Wherever a navigable river or creek swept past a gentle slope of the glacial drift, there a settlement was made; and from such settlements grew Lynn, Medford, Cambridge, Watertown and the other older townships of the colony. The creeks were the first roads and the marshes the first hayfields. So reluctant were the colonists to attempt the subjugation of the great woods and the slopes of bowlders, that, when the open spots near at hand had been occupied, hundreds of people braved the dangers of a long march over Indian trails to reach and settle in the soft intervales of the Connecticut valley. Had the prairies of the West been accessible, the rougher parts of the district would hardly yet have been tamed. As it was, when population increased, men were forced to take up axe and crow-bar in grim earnest. The great hills of bowlder clay had to be made cultivable; generation after generation labored with the trees and stones, and at last the rounded hills stood forth as mounds of green, marked and divided by walls of field stones, and sometimes crowned, as at Clapboardtree Corner in Dedham, with the white churches of the victors. Naturally the bounding hills of rock were only entered for their timber; nothing else was to be won from their wild crags. After two hundred years of these arduous labors, the neighborhood of Boston was a lovely land. The broad or narrow marshes still lay open

to the sun and air, through them the salt creeks wound inland twice a day, about them lay fields and pastures backed by woods upon the steeper slopes, and across their sunny levels looked the windows of many scattered houses and many separate villages.

What causes brought into this land that ever-increasing body of population, the coming of which has so shattered the idyllic landscape of the earlier days, it is not for me to attempt to determine. Whatever its causes, a flood of population, gathered from Europe, Canada, and the country districts of New England, has poured itself into the Boston basin, and here among the marshes and the steep hills it is trying to build for itself a healthful and beautiful city. The undertaking is one of enormous difficulty. Add to the problem of Venice a tide that flows and ebbs from nine to eleven feet instead of two, a jumble of hills each of which rises steeply to more than one hundred feet of elevation, and a winter climate which locks even the salt waters with ice, and you have the problem of the central parts of greater Boston.

The peculiar intricacy of the topography caused all the first streets and country roads to follow very crooked courses; and when a city began to grow here, one of the first necessities was better means of communication than the old ways which wound around the hills and marshes could afford. Accordingly long bridges and causeways were thrust out across the flats in all directions, and from their terminations turnpike roads were carried far into the inland country. In order to eke out the scanty building land in the heart of the district, the flats along the causeways and in the coves of the marshes had next to be filled with gravel taken from the nearest hills, or brought in later days from distant hills by railroad. Upon these filled lands all structures, from buildings to sewers, must be founded on driven piles or otherwise "floated;" from these lands there is no fall for the draining off of storm-water, except when the tide is out; from them there can be no way of removing sewage except by pumping its whole volume up to such a level as will deliver it to the ebb tide. In view of the great cost of all these works, it is no wonder that population and manufacturing have in many places crowded upon even unfilled marshes, trusting to dikes to keep the waters out; neither is it any wonder that the regions in which these wet lands are at present but partly filled and but partly built upon should be both ugly and unwholesome.

In the inland parts it is unfortunate but equally natural that the wet lands along the streams tend to become built upon in the same

cheap and unsightly ways. Factories have placed themselves along the rivers and brooks; and near the factories, and always with their backs to the stream, are built the houses or tenements of the employees. Thus a once pure stream is at one blow made both foul and ugly. So also with the many areas of ill-drained upland. Wet land being cheap, it is cheaply built upon, to the detriment of both the healthfulness and the beauty of the district.

As to the original drumlin hills of the district, some have been wholly dug away for filling, others have had great holes cut out of them, others have had streets run up them at steep grades, and houses possessed of extra floors on their lower sides stuck all over them. A few hills of this difficult kind in the upland regions of Brookline have been so skilfully laid out that the roads are easy and the general result pleasing; but most of the old drumlins have been badly treated, and the result is ugliness and inconvenience.

Lastly, the same rock hills which baffled the men who cleared the drumlins are now found to present most serious obstacles to the easy construction of cities. In addition to their exceeding roughness, the very hardness of their rocks makes the necessary excavations for streets, cellars, water-pipes and sewers very expensive; and accordingly the larger rocky regions of the district have not yet been seriously invaded by the waves of population flowing against their feet.

PART SECOND.

Assuming now a thorough acquaintance with this strange city of the marshes and the hills, we must next inquire in what manner the peculiar facts of the situation about Boston should influence the selection of permanent open spaces.

We have found that the metropolitan district of Boston lies, even at this late day, between two wildernesses; on the one hand the untamed heights of the rock-hills, on the other the untamable sea. If it be true that easy access to the refreshing beauty of the natural world is of the greatest benefit to crowded townspeople, the people of this favored district have only to say the word and to pay out a little money annually during a term of years, and this best of possessions will be theirs at once and forever. Here the busy and the poor can find near home that best of antidotes to the poisonous excitement of city life, which the rich win by travel or by living in luxurious country seats. From every one of the greater of the encircling hills, even from the

inland Prospect Hill of Waltham, the ocean is in sight; and, even if these wild hills were not interesting in themselves, this fact alone would make them valuable to the public. In the other direction the open sea and the surf on the shore is but four miles from the State House: on a quiet night after a storm its note can be heard in the streets; its flowing tide "twice every day takes Boston in its arms."

Thus has nature placed and preserved at the very gates of Boston riches of scenery such as Chicago or Denver or many another American city would give millions to create, if it were possible. Stupid indeed will be the people of greater Boston if they fail to perceive and attend to their interests in this matter before the opportunity is lost.

We have further found that the inhabited district is invaded in many crooked directions by the tides, and swamped in many other parts by the fresh waters. What does the greatest good of the greatest number, if not the self-interest of the landowners of such parts, demand?

In view of the fact that good building land is scarce in the heart of the district, it is obviously necessary that all the lesser areas of mud-flat, marsh and swamp, as yet remaining unfilled, should be filled as soon as may be, thus preventing whatever nuisance may tend to arise from their presence in the midst of the city, while at the same time increasing the area of taxable real estate. On the other hand, such filling, with the accompanying obliteration or covering of ancient water-ways, must not be carried too far, for it has its great dangers. The large water courses, both salt and fresh, cannot safely be meddled with. As has been pointed out already, it is only when the tide is out of the Mystic and Charles rivers that extensive areas of natural and artificial lowland can be drained of storm-waters; if their natural outlets were filled up, these areas, with all their streets and houses, would inevitably become swampy. As to the fresh-water streams, they are subject to floods which cannot be confined within any ordinary conduits or covered channels, as one or two disastrous experiments in this line have proved.

If, then, these larger water-ways must be preserved even in the midst of dense populations, how shall they best be treated? Shall they continue in the future, as in the past and present, to be abused, polluted and defaced by the population living on their banks or near them? Is this for the public advantage? Shall factory waste, sewage and rubbish of all sorts be continually

poured into them, and then allowed to rot in the sun when the tide goes out or the water is drawn off to turn the wheels of factories? Such practices can hardly be conducive to the public health of a region already more than threatened with malaria. Such practices should indeed be impossible in every civilized community.

Fortunately for greater Boston, most of her streams and ponds may still be rescued and converted from evil to good uses. Public control or ownership of the banks of the streams will work their cure and ensure their permanent preservation as the most charming of the many charming features of Boston scenery. For such public control will not only tend negatively to prevent the dangers to health already mentioned, but it will also have many positive good results. It will give an added value to adjacent real estate, which will ensure its occupation by good houses having their fronts, and not their back yards, turned towards water-side roads. It will eventually provide a whole series of public promenades and playgrounds for the use of the population which tends to crowd into the valleys. It will restore and preserve the attractiveness of the streams for that large class of citizens who take pleasure in boating. It will also provide, since the main streams flow towards the heart of the city, a series of sorely needed pleasant routes leading from the country, through the suburbs, to the city, and even to the bay or ocean side beyond.

Thus we find that the rock-hills, the stream banks, and the bay and the sea-shores are the available and the valuable sites for public open spaces; available because they are still generally unoccupied and cheap, valuable because they present both the grandest and the fairest scenery to be found within the district.

After what has been said, it hardly needs to be added that the metropolitan district can no longer afford *not* to take possession of its inheritance in these lands. Private ownership of the lands referred to is not only detrimental to the public welfare in the ways already mentioned, but it is also thoroughly bad as a measure of public financial policy. Private ownership of such lands, because of the need of quick returns, inevitably tends to their occupation by cheap makeshift structures of small taxable value; whereas public ownership will so enhance values that the whole community will reap a profit in the end. Once the lands in question are owned by the public, the work of development may safely wait.

Only one other word needs to be said before passing to a review in detail of the existing and proposed open spaces. Playgrounds

for children and youth are among the necessities of modern town life. Large or continuous open spaces, like those about to be suggested, will provide ample playground for the children of the population seated near them; so that smaller squares, gardens and open-air sitting-rooms and nurseries will need to be provided only in those crowded districts which the larger spaces do not serve. All scientific planning of open spaces for large cities proceeds thus from the greater to the less. The greater spaces are of first account, because if they are not acquired at the right time they can never be had, and because they afford not only fresh air and playroom, which is all that small spaces can offer, but also those free pleasures of the open world of which small spaces can give no hint. Moreover, in the case under consideration, the peculiar subdivision of the metropolitan district of Boston into thirty-six separate political units makes it unreasonable, and indeed impossible, to expect that these units should act as one body or pay as one body for more than the principal, leading or trunkline open spaces of the district. Such small spaces as will be needed after the larger spaces are provided will have to be acquired by the action of local authorities or by the co-operative action of two or more such bodies; and, since small spaces are almost entirely of local benefit, this seems to be quite as it should be.

PART THIRD.

The foregoing studies have led to the conclusion that those large or continuous open spaces which will most benefit the whole population of the metropolitan district are situated on the rock-hills, along the stream banks, and on the sea and bay shores. Now, therefore, it becomes a pleasant duty to examine each of these special sections of the district in some detail, in order that we may learn to what extent these hills and shores are already dedicated to public uses, and in order that we may determine what particular parts thereof can, with the greatest economy and advantage, be forthwith added to the public domain.

The Rock-hills. — In the whole length of the northern rock-hills only one crowded town is really founded upon them, — namely, Marblehead, which had to twist its crooked lanes between the ledges in order to avail itself of a good harbor. From several public points of vantage on the rocks of the shore the townspeople, with great numbers of visitors from a distance, annually view the beautiful pageants of the yacht fleets of New England.

In Swampscott, the next township, the rock-hills are beginning to be occupied by houses which look southward to the blue waters of Nahant Bay, over the narrow strip of drift lands upon which stood the fishing village of the past.

In Lynn the original settlers occupied a somewhat wider strip of coast lands, and during many years held the rocks in their rear as "commons." When at last they were divided they were used as wood lots. Even when a few years ago Lynn had become a city of fifty thousand inhabitants, the hills were still as uninhabited as ever; so that when the need of a public water supply arose, the city had only to collect, by means of a few dams in the valleys, the uncontaminated rainfall of her own wooded highlands. Meanwhile many citizens had come to appreciate the great value to a crowded population of these neighboring wild rocks with their broad views over the ocean, the ponds and the woods; and soon whatever lands remained between the tracts acquired by the water board were given to or purchased by the Lynn park board, and through it dedicated to the enjoyment of the public. To-day the Lynn Woods embrace some two thousand acres, and constitute the largest and most interesting, because the wildest, public domain in all New England. On the other hand, if we exclude the expenditures of the water board, the woods have cost the public treasury of Lynn only thirty-five thousand dollars. About one hundred public-spirited private citizens have contributed in gifts of land and money the equivalent of another thirty-five thousand dollars. Thus for the small sum of seventy thousand dollars the "city of shoes" has obtained a permanent and increasingly beautiful possession which is already bringing to her a new and precious renown.

Westward again, beyond the deep-cut valley of Saugus River, the next great body of the highlands contains many fine parts, such as the rough hills in northern Saugus, the bold frontal elevations which overlook the great marshes, the charming hollow of Swain's Pond and the pretty valleys of the brooks which flow towards Pranker's Pond. It is to be hoped that the real-estate dealers, who will soon be cutting up this region, and the townships which include it in their limits, will unite upon a sensible scheme of development by which the courses of the brooks and the highest rocks will be secured to the public, thus insuring the perpetual continuance of that picturesque attractiveness which is sure to lead population into this region before long. Such laying out of lands for sale as has been done here has been done badly, except at Pine Banks on the edge of the next cross valley — that of Malden

River — where a single landowner has built many roads, in a particularly charming locality, upon lines which properly conform to the topography. But even here it will be necessary, when the selling of house lots begins, to reserve long strips and blocks of open ground, if that beauty of situation which gives a special value to the house sites is to be preserved.

Just beyond the once charming but now populous vale of Malden River we must climb a rocky cliff in order to enter the next wild region, once called the Five Mile Woods, but now generally known as the Middlesex Fells.* Unlike the two preceding plateaux, this elevated region is entirely surrounded by rapidly growing towns and cities, whose boundary lines meet among the rocks. Four of the surrounding municipalities draw water from its valleys, and for the protection of the purity of the waters large areas of land have lately been converted from private to public ownership. Other public holdings of the region are Bear Hill, the highest summit, controlled by the park board of Stoneham, and Virginia Wood, the gift of the late Mrs. Fanny H. Tudor to the Trustees of Public Reservations. In short, this region of wild rocks and dells is now in the same condition in which the Lynn Woods lay before the park board knit together the disjointed pre-existing reservations by acquiring the intervening and surrounding lands. On the other hand, the Middlesex Fells cannot, under existing conditions, be broadly united into one great reservation, because they lie within the bounds, not of one municipality, but of five. When new legislation shall have provided an instrument by which the unifying work which has been done in Lynn may be accomplished in the divided Fells, the people of Boston, Cambridge, Somerville and the nearer municipalities will soon find themselves possessed of a common domain which, with its Spot Pond, its Bear Hill, its Pine Hill and its many less conspicuous but delightful ponds, pools, brooks and crags, will rival, if it will not surpass, Lynn Woods.

Westward once more, beyond the Mystic River valley, the swelling highlands of Winchester, Arlington and Belmont are far less rugged than those of Lynn, Saugus, Melrose and the Fells. They are cultivable in most parts, while in Arlington the so-called Heights have become a suburban colony, the inhabitants of which can see the New Hampshire mountains in one direction and the ocean in the other. Two-thirds of the way over to the Charles

* See illustrations Nos. 1, 2, 3, 5, 6, 7.

River valley, Beaver Brook issues from the highlands through a miniature gorge and then flows among some glacial ridges upon which stand the largest surviving oak trees of our district.* The waterfall in the little gorge and this famous grove of oaks should certainly be preserved; but this cannot be accomplished under any statutes now in force, because the brook is the dividing line between Belmont and Waltham. Again, as in the case of the Fells, an instrumentality new to our community is needed.

Still following along the front of the highlands, past Owl Hill and Cedar Hill, it is not until the heart of Waltham is reached that any present need of a large open space appears. Here is a rapidly increasing community which is fortunate in finding at its very doors both a pretty river and a great and rugged hill. The river's surface is perhaps twenty feet above the average level of the sea; the hilltop one mile distant from the river rises to an elevation of four hundred and sixty feet. One who stands upon it looks eastward down the Charles River valley to where the golden dome of the State House glistens against the distant blue horizon of the sea. The slopes of the hill, still preserved from ugly scars, present several particularly attractive spots, and the neighboring but lesser Bear Hill has a distinct beauty of its own. The whole tract lies within the bounds of Waltham, so that there is nothing to prevent the opening of a reservation on this hill through local action. The hill, however, is so well placed, both with reference to the view up and down the Charles valley and with respect to its position in the metropolitan district, that it would merit the attention of whatever metropolitan parks board may be established.

Leaving Prospect Hill and Bear Hill, it is but a short distance to the large collecting reservoir owned by the city of Cambridge. Here the waters of Stony Brook are held in a long narrow valley before setting out for Cambridge or escaping to the Charles. At the mouth of the stream is the stone tower built by Professor Horsford to mark his conception of the site of a Norse city, and at the valley's head is a rocky passage through which the brook enters the reservoir with a rush.

The point now reached is just half-way around the inland circuit of the metropolitan district; in other words, it is ten miles due west from the State House. Moreover, it is at the meeting place of the Charles River and the northern highlands. The lower

* See illustration No. 14.

reaches of the river and the easy roads of its valley lead thence through populous regions to the city, while the upper river valley leads south-eastward along the border of the metropolitan district towards the southern highland of the Blue Hills. So central a situation, should, if possible, afford a large and interesting public recreation ground, and it is most fortunate that nature has here provided all the elements and placed them ready to our hands. If to the charming water park of Charles River and Stony Brook there be added not only Prospect Hill to the north of the reservoir but also Doublet Hill on the south, a very satisfactory reservation will be obtained. The latter hill, while not so high as Prospect, commands more pleasing views of the river valley, while from the surface of the stream it is itself an attractive, and sometimes an imposing, object.

Passing now up the Charles River valley toward the southern highlands, it is well to stop for a moment at the wonderful little gorge of Newton Upper Falls, where the river cuts its way through ledges clothed with hemlocks.* The narrow stream flows swift and dark between quaintly broken rocks, and the great stone arch which bears the Sudbury River aqueduct leaps boldly across from bank to bank. Like the brook and the oaks at Waverley this is a spot of uncommon interest and beauty, which, because it lies within the bounds of three municipalities, can be preserved for the delight of the public only by some co-operative or metropolitan agency.

Where Charles River makes its great bend in Dedham we leave the stream in order to discover the southern counterpart of the Fells. As Bear Hill in Stoneham is eight miles north north-west from the State House and three hundred and twenty-five feet high, so Bellevue Hill in West Roxbury is seven miles south south-west and of practically the same elevation. The growing suburbs of West Roxbury, Dedham and Hyde Park surround it, and town streets are even now climbing its slopes ; but, on the Hyde Park side, there still remains a large area of exceedingly rough and steep land, in the midst of which is concealed a low-lying pool called Muddy Pond.† From the summit of Bellevue, whence the sea is in full view, to the shore of this pond is half a mile, but the descent is more than two hundred feet. Half-way down, if we pause for a moment on the Dedham turnpike, or on one of the many jutting

* See illustration No. 19.

† See illustration No. 21.

ledges of rock, we shall see over the pond, the pine woods of the valley, and the half-concealed town of Hyde Park, the range of the Blue Hills, — no longer the pale blue masses which we saw from Lynn Woods and the Fells, but near by and sharply cut.* This striking view, the panorama from the hill-top, and the sheltered wildness of the deep valley of the pond, render Bellevue Hill with the Muddy Pond woods the most valuable open space now obtainable in this section of the metropolitan district. This is, however, another case for metropolitan action, for the boundary which divides Hyde Park from Boston also divides these woods.

Crossing the Neponset valley we at last reach the Blue Hills, — the "mountains" of the metropolitan district.† Although they extend hardly one-fourth the length of the northern range of rock-hills their average elevation is three times as great. So considerable a barrier do they present, that the railroads, the creators of suburbs, have avoided them entirely, — with the result that in all the five miles from the eastern base of Rattlesnake Hill to the western foot of the Big Blue there are not yet a half-dozen buildings standing on the hills above the contour of two hundred feet. There are, indeed, in all this distance only two roads which cross the range. From end to end the wilderness is still practically continuous. The hunting of foxes and raccoons is still carried on in it. Its separated hills are far larger, if no bolder, than the others we have seen. The notches or passes between the hills are often deep and steep-sided, and the views down the side valleys to the sea, or out over the seeming plain of south-eastern Massachusetts, are surprising and grand. It is true that the original forest was swept away years ago, and its substitute of oak and chestnut is a little monotonous; on the other hand the highest parts of all the hills are variously clothed with scrub oaks, cedars, pines and other toughest growths, while the many narrow and shady defiles shelter other species of their own, among them the mountain laurel, which is very rare near Boston. If the people of metropolitan Boston care to possess in common a park such as any king would be proud to call his own, a public forest possessed of vastly finer scenery than any of the great public woods of Paris can show, a recreation ground far surpassing in its refreshing value even London's Epping Forest, they have only to possess themselves of the still cheap lands of the Blue Hills.

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* See illustration No. 20.

† See frontispiece.

Like the other highlands which have been mentioned these Hills stand wholly within the sweep of the eleven-mile radius from the State House. They lie south of Boston as the Lynn Woods lie north; and if it is well for the public to possess the northern reservation, it will be even better for it to own the grander southern heights.

Lastly, and speaking with reference to all the open spaces thus far mentioned, it only remains to point out that, once they are acquired, they need cost little for maintenance and nothing for improvement, at least for many years. They are all of a kind which, if forest fires are prevented, will take care of themselves. Moreover, their first cost need not at all alarm the taxpayers of the district. A study of valuations and acreage would seem to warrant an estimate that one million dollars will more than suffice to-day to purchase all the highlands herein named. In other words, there are needed only as many dollars as there are inhabitants of the metropolitan district. This being so, it ought not to be long before the combined action ot the metropolitan population shall make the hills their own.

The Ponds and Streams. — When it comes to examining the little lakes and rivers of the metropolitan district their case is found to be different from that of the rock-hills. Population, which has everywhere avoided the heights, has, like the waters, settled in the valleys. Indeed most of the centres of suburban populations are crowded, like Hyde Park and Waltham, upon the very banks of streams. Thus at first sight it seems as if the proposed resumption of the banks by the public were already impracticable, if not impossible, so great must be the expenditure which the work of rescue must entail. On the other hand, as already pointed out, the advantages the whole community would reap from public ownership of the water ways are so many and great that the endeavor to secure them cannot be abandoned hastily or without a careful study of the facts and the possibilities.

The streams as they flow through the district on their way to the sea must, therefore, next be followed; and for this purpose the Mystic, Charles and Neponset had better be taken, rather than their more rural mates, the streams of Saugus and Weymouth.

The Abbajona, as the upper Mystic River is called in Winchester, is already by no means a clean stream; and yet, below the last of the tanneries which pollute it, the appearance of the winding rivulet and its banks is quite delightful, particularly where it passes under a quaint little bridge to find its outlet in the Upper

Mystic Lake. Here is a natural pond converted by a dam into a collecting reservoir of the Boston water works. Its shores are intricate in outline and attractively wooded, but much of this attractiveness may be destroyed at any time, for the city of Boston owns hardly anything more than the land under water. Below the dam the lower lake lies so low that its waters feel the ebb and flow of the tide. We are still eight miles in a straight line from the sea and in the mouth of one of the gaps in the northern range of rock-hills; yet just after the Mystic River has quitted this lower lake there appears a little flat of salt marsh upon either hand, and from this point to the river's mouth this green border of meadow is never absent. Down to Medford the marsh on the left bank is bounded by a fine tree-clad bluff of upland, from which some of the solid mansions of a hundred years ago still look southward across the sunny open of the river. At Cradock bridge buildings are crowded to the water's edge, and just below the bridge is the head of navigation, where ships were built while there was still ship timber in the Fells, and where now an occasional schooner discharges a freight of coal, lime or lumber. From the lower wharf the view south-eastward and Boston-ward includes what seems an ever-widening salt marsh, through which the channel winds in broadening loops, one of which swings out of the sunlight of the meadows into the shadow of the steep Winter Hill of Somerville. Three or four manufacturing concerns, of the sort which require cheap lands and no near neighbors, have set up buildings on the marsh; but there is no considerable settlement upon the river bank until after the lesser Malden River has entered from the north and the long railroad bridges have been passed. Here the channel becomes deep enough to float considerable vessels, and a huge chemical factory and many coal "pockets" are seen. Thus far, excepting for a short distance near Cradock bridge, there is really nothing to prevent the reservation of the banks for public use; and ultimately, though perhaps many years hence, the construction of a river road which would provide the pleasantest possible route to Boston from Medford, Arlington and Winchester and all the towns beyond. Below the railroad bridges commerce should undoubtedly possess the river; so that travellers by the river road, if bound to Boston, will have to make their way through Charlestown, or over that boulevard terminating in Haymarket Square, which the consolidation of the railroads will make it possible to lay out, approximately on the present location of the old Boston & Maine line.

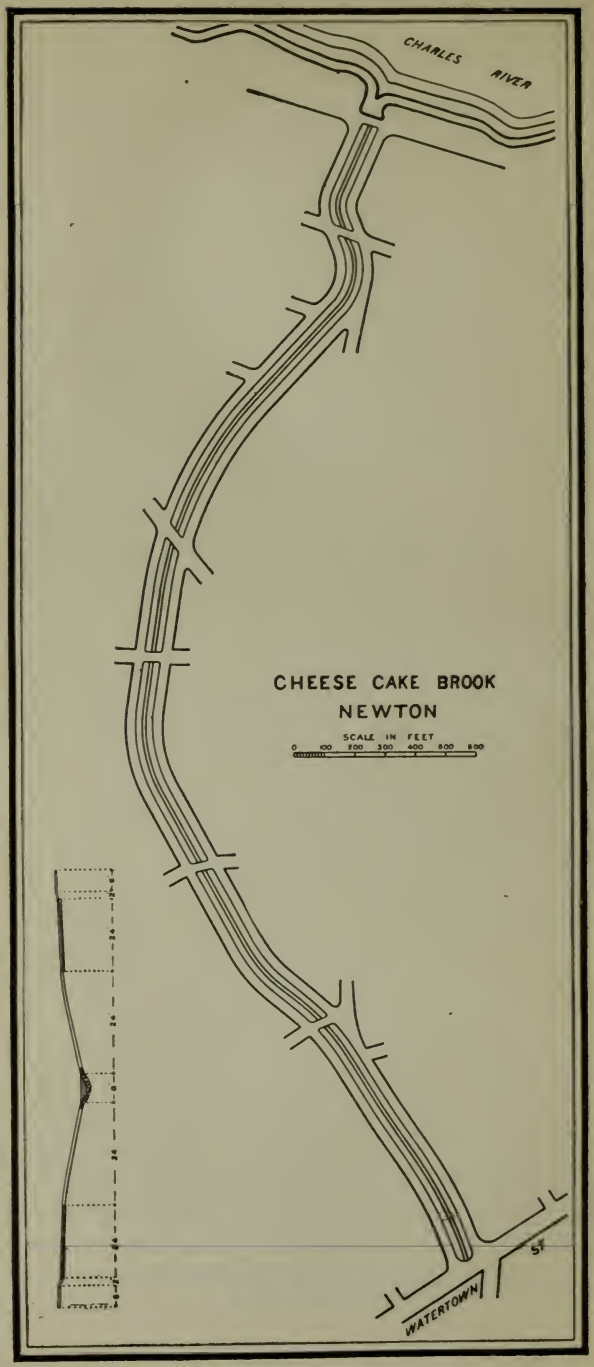
If, on the other hand, the traveller from up the river is bent on pleasure and desires to drive to the sea, it will not be difficult to provide him with an easy and pleasant way crossing Malden River near its mouth, passing by the head of Island End Creek and so down Snake Creek and by a branch of Belle Isle Creek to the southern end of Revere Beach.* This route will bring the ocean beach within six and one-half miles of Cradock bridge, Medford, within seven miles of Harvard Square, Cambridge, and within correspondingly short distances of many other places whose inhabitants at present never think of driving to the sea because of the miles of pavement which must be traversed on the way.

Doubtless the feasibility of reserving so continuous an open space will largely depend upon the temper of the owners of the river lands. If they can see their own advantage, the needed reservation will be obtained almost as soon as a metropolitan parks board can be created. If, however, for any reason the continuous space should prove out of the question, the metropolitan board should at all events possess itself of the valley and mouth of Island End Creek,† which lies within the bounds of Chelsea and Everett and is the only space which now remains convenient to the populations of those two growing cities.

Proceeding now to Waltham, Charles River should be followed in its course through the very middle of the metropolitan district. As far as Watertown the stream is of fresh water, flowing tranquilly through lowlands. A few large mills are seated on its banks, but outside of the closely built parts of Waltham and Watertown the shores are generally quite free from buildings. Half-way between the towns is the mouth of Cheese-Cake Brook, where the city of Newton is practically illustrating the treatment which, with local modifications, should be applied to all the larger waterways of the district as soon as the lands about them are demanded for building purposes. Instead of covering the stream with back yards or a street, the watercourse is placed in an open strip of grassy or bushy ground, upon each side of which is constructed a roadway affording access to houses built facing the stream. In this way three results are brought about at once. The pollution of the stream is effectually prevented, a handsome thoroughfare is created, and the value of adjacent real estate is so enhanced that it much more than makes good the subtraction of the brook

* See illustrations Nos. 9 and 10.

† See illustration No. 8.


CHARLES RIVER
CHEESE CAKE BROOK
NEWTON
SCALE IN FEET
0 100 200 300 400 500 600
WATERTOWN
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banks which have been given to the public. The treasury of the city of Newton will soon be more than reimbursed by the increase of the taxable values along the stream.

Below the dam at Watertown Charles River is salt, and bordered by salt marshes backed by more or less distant uplands. Out of a total length of sixteen miles of bank, from Watertown bridge to Craigie bridge and back again, almost four miles are already controlled by public or semi-public agencies. Among the rest the United States Arsenal, the Cambridge Cemetery, the Corporation of Harvard College and the city of Boston all own long frontages, — a part of Boston's river front has already become a popular promenade and playground, known as the Charlesbank. Moreover, the percentage of the remaining frontage occupied by costly structures is very small. Most of the marginal proprietors are still at liberty to do what they choose with their own. It must be evident to them that the use of the river for shipping purposes is almost at an end. Navigation by masted vessels cannot be continued much longer, because of the intolerable interruption to traffic caused by the opening of the draws of the crowded bridges. This being admitted, the question arises whether the most profit will in the end be reaped by offering the river lands to the builders of factories and slums, or by drawing to them the builders of good private and apartment houses. One numerous body of marsh and flat owners has already staked its money on the belief that the most profit is to be derived from the last-named method of procedure. Acting on this conviction the Charles River Embankment Company has given the city of Cambridge a riverside esplanade two hundred feet wide and five thousand feet long, in the rear of which it is building a series of fine streets which converge upon Harvard bridge. In Watertown another company of landowners is about to lay out a large tract of riverside upland upon a similar, though a more rural, plan. In Boston around the so-called Fens, and in Brookline and Boston along the improved Muddy River,* real estate is already reaping the advantages arising from the successful conversion of a damaging nuisance into a profit-making attraction. What has been done in these last-named places can gradually be done in less expensive ways along Charles River whenever a metropolitan commission, free to act in several cities and towns, shall be impowered to co-operate with the local

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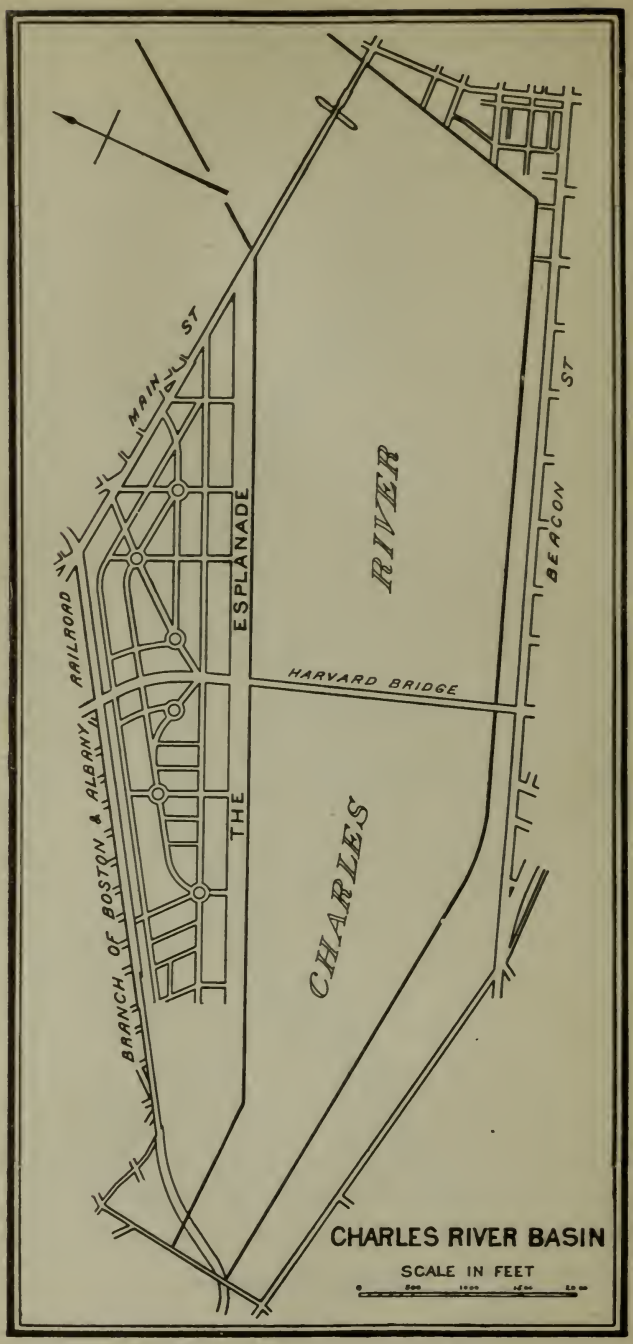
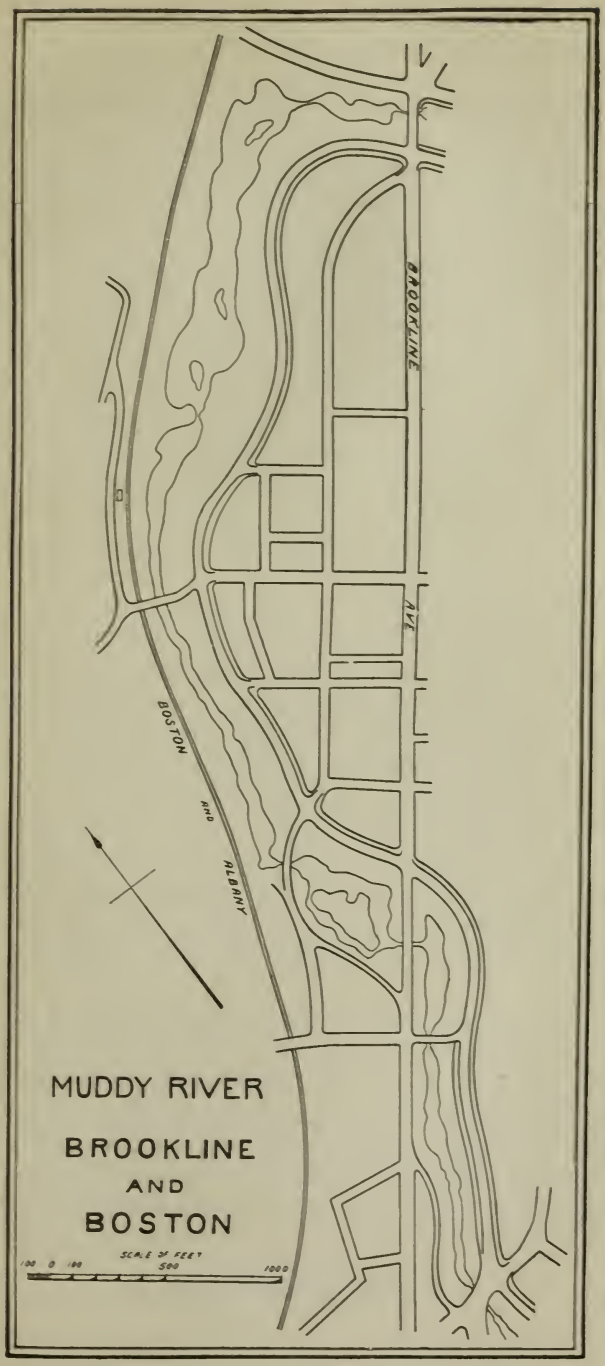
* See diagram on page 104.


MAIN ST
RAILROAD
BRANCH OF BOSTON & ALBANY
ESPLANADE
THE
CHARLES
RIVER
HARVARD BRIDGE
BEACON ST
CHARLES RIVER BASIN
SCALE IN FEET


BROOKLINE
AVE.
BOSTON
AND
ALBANY
MUDDY RIVER
BROOKLINE
AND
BOSTON
SCALE OF FEET
100 0 100
500
1000

landowners in pushing forward a work which cannot fail to profit both the landowners and the public.

For the descent of our third river — the Neponset — the start should be made from Dedham. A small tributary of the Neponset, called Mother Brook, has here been artificially supplied by means of a canal with an overflow of water from the meandering Charles, so that we find a good canoe stream, which, in the course of two charming miles, brings us among the factories of the town of Hyde Park. The brook flows crookedly between high banks of trees in a valley surprisingly little injured by the occasional factories which use the water power. The mills are still half concealed by trees and by the very narrowness and crookedness of the valley. In some parts there are already brookside roads having fringes of trees between them and the water. In other parts the banks afford beautiful views down the descending valley to the Great Blue Hill and its mates. On the other hand, in Hyde Park, where the brook joins the river, we have a striking exhibition of the abuse of streams. The river is here a sewer, and its bank a rubbish dump and continuous back yard.

Passing through Mattapan to the head of the tide at the foot of Milton Hill several long-established factories are met, but no very evil places. Along most of the way the banks are beautifully fringed with trees and bushy thickets,* and in some parts the desirable river roads already exist. At length, with a rush between two great brick chocolate mills, the fresh water river makes a sudden turn, and, sweeping around a last pine-clad point, flows out to join the tide of the salt marshes. Just here is one of the most picturesque spots in the whole neighborhood of Boston, and one which well illustrates the fact that the evidences of human industry, such as the wharves, sheds and schooners which here are mixed with trees and rocks, may often be very helpful to the effectiveness of scenery.

The marshes bordering our river from this point to the lower bridge are framed with woods and especially adorned by two wooded knolls or islands. As yet there is not a single building to mar the beauty of their open levels, the best view of which is had from near the Neponset bridge, where the oak islands, Milton Hill and the Great Blue Hill, looming in the distance, compose a quiet landscape such as is hardly to be found elsewhere within our

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* See illustration No. 24.

district.* Beyond, on the way to Squantum, are two striking rocky knolls covered with dark cedars and surrounded by the marsh, and then a winding marsh road is traversed, scarcely raised above the level of the waters of the bay, which now appear on either hand.

As the ocean at Revere Beach was reached by a ten-mile drive from Winchester down the valley of Mystic River, so now the bay shore at Squaw Rock is reached by a ten-mile drive from Dedham down the lovelier valley of the Neponset. Half-way between these northern and southern riverways we find Charles River, leading, by another course of ten miles, from Waltham through the very centre of the metropolitan district to the basin just west of the State House. Nature appears to have placed these streams just where they can best serve the needs of the crowded populations gathering fast about them. Moreover, if action is taken quickly to establish an executive body charged with the duty of defending and asserting the interest of the whole community in the right treatment of these rivers, there will not be found to be any very great difficulty in acquiring, in some parts that public ownership of the banks, and in other parts that simple right of way, which is all that is essential at present. The self-interest of the river landowners, and the self-interest of the separate river towns, will conspire to assist such a new board in its work. A great benefit to the public would practically be assured from the start.

There remains one other kind of inland open space of more than local yet of not such general value as the rivers, — the ponds of the district, about which, as in the case of the rivers, there ought generally to be a protecting public way, even if it be no more than a footpath. Here again the intelligent interest of speculative landowners will in time effect something, — the more quickly if such private interest can be encouraged by a board officially representing the public interest in such works. What can be done is well illustrated at Lake Quannapowitt,† where a public road follows a tree-fringed shore for more than a mile, and gives access to the boating which the lake affords. Most of the ponds are, however, too small for boating; so that those who take pleasure in that sport make use of the Charles River between Waltham and Dedham, — a part of the river thus far omitted because, for the purposes of this report, it is to be regarded as one long pond.

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* See illustration No. 26.

† See illustration No. 4.

From Waltham to Newton Lower Falls the stream is still idyllic in its beauty, though threatened here and there by monstrous ugliness. Hundreds of persons from Boston and many other parts of the district are to be found here every pleasant afternoon in summer. In all this district there is no other place where quiet boating in such surroundings can be had.*

Must all this beauty of the upper river, with all its valuable opportunities for recreation, be destroyed? The town of Brookline and the cities of Newton and Waltham draw their water supplies from this valley; and for the protection of those supplies they already own between Waltham and Dedham some six out of a total of twenty miles of river bank. They ought to own much more; and as in the Fells a metropolitan commission might do the public great service by joining the domains of the various water boards, so here upon the Charles River the same body might likewise do much for the public by encouraging further purchases, by accepting the charge of gifts of lands, and by showing the landowners and the towns the many dangers both to health and to property which the continued private ownership of the banks will entail.

The Bay and the Sea. — As already seen, about one-fourth of the whole area swept by a radius of fifteen miles from the State House is occupied by the bay and the open ocean. Here, accordingly, is Boston's one great "open space," whence comes her famous east wind with many another blessing in disguise. Most of the sheltered bay is shallow, yet sufficiently deep for pleasure craft of small tonnage, some eight hundred of which are owned in the metropolitan district, — many more than can be counted in any other harbor of the Atlantic coast, not excepting the grand bay of New York. In summer the channels among the islands are sometimes fairly thronged with crafts, among which pass the pleasure steamers which daily carry thousands to the fine seashore of Nantasket or Nahant.

Viewing these pleasant scenes of healthful recreation it is a delight to think that all is as it should be, that here at last is a section of the district where nature has supplied the people with the best sort of a park, — an inalienable pleasure ground such as cannot be enclosed for private use, cannot be damaged and cannot be improved. Yet, if this is the first thought the second is of ominous tenor. True is it that the waters cannot but remain free to all; but can the same be said of the shores?

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* See illustrations Nos. 15, 16, 17, 18, 19.

Upon inquiry it will be learned that of all the ocean shore of the metropolitan district only Nahant Beach, which is a highway, belongs to the public. Even within the bay the public holdings are but few. To be sure, most of the islands belong either to the United States or to the city of Boston, but they are used for forts, reformatories, hospitals and poorhouses. They might easily be clothed with foliage,* to the great improvement of the scenery of the bay, but they cannot well be given over to the use of the general public. On the bay shore of the mainland only the city of Boston owns any public spaces, these being Wood Island at East Boston, the Marine Park and the Old Harbor Parkway at South Boston, and the main drainage reservations at the Cow Pasture, Squaw Rock and Moon Island. Everybody recognizes the value of these bayside spaces, they are more popular than any of the other great works of the Boston park commission, they point the way by which a metropolitan parks commission may at once win public favor and support.

Boston has now done nearly all that can be done upon the shore within her limits. If the public is to own any of the ocean front and any more of the bay shore, divided as both are among many towns and cities, it can only be through the encouraging and helping activity of a metropolitan parks commission. And when such a commission is established, what should be its first work upon the shore? The answer is, — the acquirement of the title to the foreshore and the beach from Winthrop Great Head to the Point of Pines. Winthrop Head stands almost due east from the State House, and looks eastward and seaward half-way between the promontories of Nahant and Hull.† Between it and Grover's Cliff the beach is already owned in common by the proprietors of the crowded houses on its crest. Grover's Cliff is the property of the United States. It is only along Revere Beach that difficulty will be encountered in securing free public access to the shore. The present condition of this fine beach is a disgrace.‡ Two railroads and a highway have been built upon it, without regard to either the safety and convenience of the public or the development of the highest real-estate values. The railroads cared only for a location which would enable them to use the beach as an attraction to draw passengers. No account was taken

* Compare illustrations Nos. 28 and 29.

† See illustration No. 11.

‡ See illustration No. 12.

of the fact that swarms of people must induce a demand for buildings, and so the buildings have had to find sites where best they could, generally between the highway and the sea. A thorough reformation is called for here, in the interest not only of the general public but also of the beach proprietors and the treasury of Revere. The real interests of the railroads demand a proper arrangement of the beach. Its capabilities as a place of residence, equipped with a broad esplanade and drive, and lined with houses and hotels facing the south-east and the sea, are as yet not understood; * nevertheless, the time is coming when they will be understood, and when that public control of the shore which can now be brought about at comparatively little cost will be appreciated at its worth.

Conclusion.

The circuit of the rock-hills, the streams and the shores of the district has now been completed, and it only remains to add a few words of general application.

In proposing the acquisition of the particular spaces named, I have been influenced by nothing but my view of the public needs and my estimate of the district's financial powers. That the proposed open areas lie so symmetrically within the district, Lynn Woods mating with the Blue Hills, the Fells with Muddy Pond, the Oaks with the Hemlock Gorge and the Mystic River with the Neponset, is due to nature.

As to the bounds of the proposed areas, I have not attempted to define them with precision. When the time comes, they should in every case be so placed that the street departments of the several towns and cities may find it easy to construct roads immediately adjacent to the boundaries and continuous therewith. Doubtless in many places the abutting landowners will give the lands which may be needed for such roads in view of the advantages their property will derive therefrom.

In conclusion, it may be well to point out that the cost of the maintenance of all the metropolitan open spaces need not, for many years at least, exceed the expense of guarding them from forest fires and other forms of depredation; on the other hand, if the community should wish to clean the streams, build paths or

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* See illustration No. 13.

roads, or do any other proper work within the reservations, it would find in the Parks Commission an instrument to do its bidding.

I desire, before closing, to express my thanks to the engineers and clerks of the towns and cities of the district for the information which many of them have kindly furnished.

CHARLES ELIOT.

726 Exchange Building, Boston, Jan. 2, 1893.

SKETCH PLAN
OF
PUBLIC RESERVATIONS
UPON THE BANKS OF THE
CHARLES RIVER
FROM HEMLOCK GORGE TO WATERTOWN

SCALES

MILE

FEET

METERS

F. L. and J. C. Olmsted, Landscape Architects
Brookline, Mass.
1897

NOTE: The dotted areas bounded by heavy lines are in part now held by the METROPOLITAN PARK COMMISSION and the remainder are about to be taken or to be controlled by means of restrictions. The dotted areas bounded by light lines are held by local public authorities.
Details of the shore lines, landings, paths and interior roads are necessarily omitted because of the small scale of the drawing.

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SKETCH PLAN OF PUBLIC RESERVATIONS UPON THE BANKS OF THE CHARLES RIVER BETWEEN WATERTOWN AND CRAIGIE BRIDGE

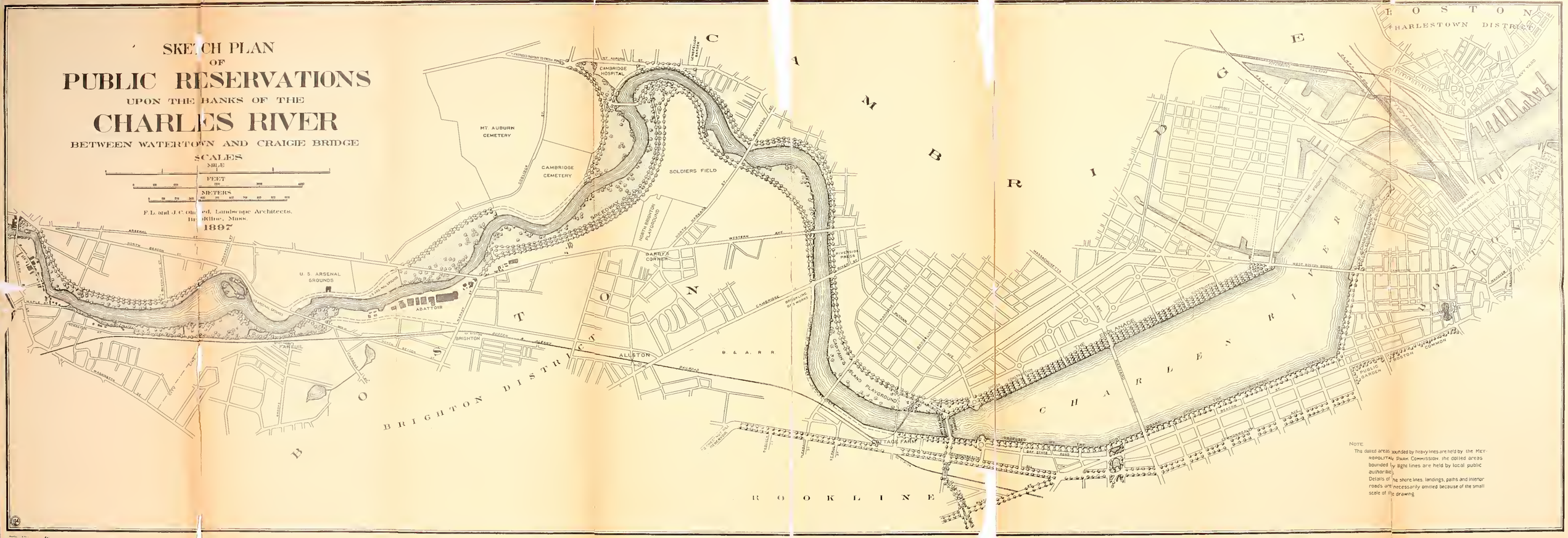
SCALES

MILE

FEET

METERS

F. L. and J. C. Olmsted, Landscape Architects,
Brookline, Mass.
1897



NOTE

The dotted areas bounded by heavy lines are held by the Metropolitan Park Commission, the dotted areas bounded by light lines are held by local public authorities.

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